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VOL. CX., No. 17
WHOLE No. 3190

NEW YORK, SATURDAY, APRIL 26, 1919

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Temptation to Meet Salesman Shortage by Attracting Men from Other Companies Will Be Great, but to Do So Will Demoralize the Industry

Reaction Will Be to the Disadvantage of the Companies Adopting Such Policy—Shortest Cut Is to Select from Exceptionally Promising Raw Material Available and Training

By J. E. BULLARD

With the coming of summer and the beginning of the gas-range and water-heater season the gas company commercial manager is faced with the problem of securing and training a number of new salesmen.

This year the difficulties which stand in the way are greater than those which ordinarily exist. During the past few years gas companies have been reducing their selling forces. In some cases they have disbanded them altogether.

It is quite certain that there will not be enough trained gas salesmen during the coming season to meet the demand.

It is probable that there will be a serious lack of such men.

The problem then is going to be to train new men, but where are they to be found?

The enormous increase in advertising that has taken place since the signing of the armistice last November indicates that the gas industry is not the only one that has been cutting down on selling expenses for some time past and has realized that extraordinary efforts must be made to secure new business if profits are to be made.

Salesmen, good salesmen, are likely to be in greater demand this year than they have ever been before.

Problem Not So Difficult in Gas Field

The dropping off of war business is going to make it more than ever important that gas companies launch intensive selling campaigns, but the same condition exists in nearly every other industry.

The gas company has one great advantage over manufacturers in other industries in that its customers are not already oversold.

Dealers in nearly every line all over the country have been carrying a larger stock, have been forced on account of the transportation conditions to carry a larger stock than they have been in the habit of carrying.

This makes the selling problems of the manufacturers doubly hard. They must help the dealers dispose of their present stocks before they can hope to sell them more goods.

This means that high-grade salesmen will have to be used.

In the gas business this is not the case. Unlike the manufacturers in other industries the gas company will not have to hire mature experienced salesmen. Young men of little or no selling ability can be trained.

Promising Raw Material Available

Since there are not enough experienced gas salesmen to go around, it is evident that many new men will have to be trained. Hiring salesmen from other companies will just encourage men to make changes, will create unsatisfactory conditions in the commercial departments of gas companies, and will increase the restlessness and dissatisfaction of the salesmen, which is great enough under ordinary conditions. It is evident, therefore, that it will be unwise to attempt any very extensive sales department building by hiring salesmen from other gas companies. The only solution is to hire new men.

Since the better grade salesmen who have had experience in selling are going to experience little difficulty in securing remunerative positions with manufacturers and business men in other lines than the gas industry, in lines where a high degree of sales ability is absolutely essential at this time, very little promise is held out of securing the very best results from the experienced salesmen who can be hired from other industries. It looks very much as though the

only way out would be to hire young inexperienced men and train them for their jobs. In this way it will be possible to secure more ambition and better talent than would be possible if older and more experienced men were sought after. One very good place to look for new recruits will be among the returning soldiers.

It should be borne in mind that many of our soldiers are no more than boys. Many of them left school to go to war. A great many of them have not yet begun to earn their own living. Their war experience, however, has matured them more than could any other experience in the same length of time. They are young in years but older in experience than many a man twice their ages. These young men have learned self-reliance, they have learned courage, they have learned self-sacrifice, they have learned honesty, they have learned the value of co-operation of working together as a unit. What better training could be asked as a preliminary to becoming a high-class gas company salesman?

Never before has there been such a fertile field in which to seek the material for a commercial department that will be able to go out and secure results. These men have learned how to secure results. The reason why they are coming home so soon is because they did secure them.

These men know what it means to go after a thing until you get it regardless of the hardships, the difficulties or the obstacles in the way. They are not the kind of men who are likely to get cold feet when they are asked to go out to sell an automatic water heater.

Among the discharged soldiers, therefore, would seem to be the best place to look for new recruits. Some of these men are excellent salesmen. All of them have been engaged in selling American standards to the rest of the world.

The other source would seem to be the young men just out of school. If good salesmen can be secured from other sources so much the better, but the other sources are more likely to prove disappointing.

What They Must Learn

After having secured the salesmen the next problem is that of training them. There are three things that they will have to learn. First, they must understand gas appliances and the meaning of gas service. Second, they must understand the policy of the company for which they are working. Third, they must learn how to sell the appliances and the service to the consumers in conformity to the policy of the company.

The only way that these new men can be trained is by establishing some sort of a school. A very good way is to have a short session each morning before the men leave the office with supplementary sessions in the evenings. It will not be satisfactory at these morning meetings to take up subjects at random. A regular course of study will have to be mapped out just as courses are mapped out in other schools. The sales manager can do this; the work may be detailed to an old salesman who has shown special aptitude for this sort of work, or someone from outside may be engaged for the purpose. In any case the work will have to be planned, and planned carefully if the results are to be effective. A little lesson taught each morning will result in well-trained, business-getting salesmen if these lessons follow each other naturally, if they are all a part of one comprehensive plan. If they are not, much of the effort expended is wasted and the sales records of the salesmen do not grow as rapidly as it is possible to make them.

It is better to teach gas appliances, the policy of the company and salesmanship all at the same time. In this way they can all be tied together and connected with each other in the minds of the new salesmen. In this way it is also possible to administer sufficiently small doses of each at a time so there will be a better chance of the salesmen remembering what is being taught them. It is surprising what half-hour lessons every morning will accomplish if the lessons are carefully planned and the class is placed in charge of a capable instructor, a man who is really interested in his work.

Working With the Experienced

In so far as possible all the new men, especially the inexperienced men, should work with the older and more experienced men. A good way to manage this is to have these new men act as assistants to the old men. Let the old men plan their work and show the new men how to do the work. By having the two work the same territory they will be together more and the new men will naturally pick up a great deal of information from the veteran employees.

The evening meetings which prove the most successful are those where the talking is done by men who are not connected with the sales department. The average salesman sees enough of his fellow salesmen from day to day and hears them talk enough to make anything that anyone in the sales department can say prove less interesting than the talk of someone from some other department or from outside the company altogether. These talks should be illustrated with apparatus, appliances, models, lantern slides or moving pictures. It is not necessary that the subjects of these meetings fit into the morning lesson course. It would be better if they could, but it is not essential that they do. The object of these meetings is to give special information about appliances or the gas business. The most important thing is that they be made so interesting that all the men will want to attend them and will not have to be forced to do so.

It is not hard to secure speakers for such meetings. The representatives of the appliance companies are usually willing to do their part. Some companies will go so far as to furnish special speakers with lantern slides for illustrating the talks, other companies may have a reel of motion pictures for the same purpose. The head of the meter department, the chemist, the superintendent of construction, the head of the bookkeeping department and men from other departments can usually be persuaded to give talks.

Such meetings prove exceedingly instructive to both the old and the new men and they never fail to increase sales. It would be well to hold these meetings once a week if conditions would permit. This, however, is not always possible. They should be held at least once a month and as much oftener as possible.

Not So Difficult a Problem as Might Appear

No sales problem is so serious when you have a trained force with which to attack it as it appears when there is no such force available. All industries are finding themselves in a more or less serious state of unpreparedness at the present time and all industries

will have to find and train new salesmen. This condition of affairs is not one that gives ground for worry. When the United States declared war on Germany she had no army. It was necessary to recruit one and to train it. When the war stopped there was on foreign soil an army of two million men. Some of these men had seen enough service to earn them the title of veterans. All who went into the line demonstrated that they could accomplish results as expeditiously as the best-trained troops in the world. It was necessary, however, to train these men before they sent them up to the front. From the time these men put on the uniform until they take it off they are constantly drilling or going to school. It was the admirable system of teaching and of training that the United States put into effect that had as much to do with turning out a winning army as it was the high type of men from which it was possible to draw recruits. Without this training, without this teaching we would never have been able to have accomplished in such a short time what we did succeed in accomplishing.

The gas industry, like many another industry, is in a rather serious state of unpreparedness from a new business department point of view. Training and teaching, however, will build up a salesforce that will produce results just as certainly as it built up an army that got results. At bottom after all it is largely a matter ot training and teaching. The very best salesman who knows nothing about the proposition he is asked to take up will not be able to accomplish as much before he has carefully studied the proposition, as will the less talented salesman who has been carefully and thoroughly trained in regard to the policy of the concern, the advantages of the goods he has to sell and the best way to present these advantages.

Future Gas-Making Practice—Steaming in Retorts

There can be no question that the introduction of the standard of calorific power act will be followed in Great Britain by radical changes in the gas-making policy of the future. Relieved of the burden of illuminating power, the gas engineer is now turning his attention to the new order of things, and suggestions as to the most economical measures to adopt are being received with more than usual interest.

The procedure of mixing a regulated proportion of blue with coal gas, which has for some time been carried out smoothly and with no untoward results so far as the consumer is concerned, has opened the way for investigation as to how this gas may best be added; and on those works where vertical retorts are in operation there can be no doubt that many advantages accrue from combining the retort and water-gas generator in one. That is to say, the lower portion of the vertical retort is accorded the function of the water-gas producer by the admission of a carefully regulated quantity of steam. The practice of steaming the coal charge has been carried out for some years in connection with vertical retorts of the intermittent type, which particularly lend themselves to the process, but it was never possible to make much headway while the candle-power of the gas had to be given primary consideration.

Two series of experiments, each of more than usual interest, have lately been carried out with steamed charges—on the one hand by John West, of Manchester (the coinventor of the Glover-West retort), and on the other by J. E. Blundell, the gas engineer to the Macclesfield Corporation. Mr. Blundell's research has just been contributed to the proceedings of the Manchester District Institution. At the outset it is interesting to note that while the bench of continuous "verticals" on which Mr. Blundell experimented was normally capable of yielding 1,000,000 cu. ft. of gas per diem, this capacity has been increased by at least 20 per cent by passing steam into the retorts and producing water gas in situ. At the same time an increase was effected in the yield of tar and ammoniacal liquor. Whether the production of water gas in this manner is economically sound has certainly been open to question in the past, but the case for the new method as put by Mr. Blundell seems to have cleared away many former misgivings. There is an essential difference between steaming as practised in the intermitten systems and as applied to continuous methods. In the intermittent retort carbonization proper is completed before steaming is started, and the retort, which during the early periods of the charge is used merely for the distillation of the coal, is employed as a water-gas generator for about the last two hours of the whole period. In the continuous system carbonizing temperatures are maintained during steaming and the production of water gas is carried on without any interruption of the ordinary dry distillation process. The late Professor Lewes looked closely into the question of the amount of dilution to which blue gas was likely to give rise, and he stated that by mixing 40 per cent of this gas with straight coal an actual increase amounting to 25 per cent in the production of candle-feet was to be found. His experiments, however, were carried out with gas made in horizontal and inclined retorts and with water gas produced in a separate generator, and results eventually indicated that this method of working was unreliable, the quality of the gas being subject to heavy fluctuations. Mr. Blundell's experience with the production of water gas in situ indicates that the difficulties found by Professor Lewes are not encountered, while there is no risk of gassing or explosion such as is the case when blue gas from a distinct plant is employed. In the ordinary system of working vertical retorts it is customary to concentrate the highest temperatures in the upper combustion chambers in order to carbonize the fresh coal quickly and to envelop it in a jacket of hot coke. By so doing, the contraction of the coke, on further heating, facilitates the descent of the charge through the retort. It seemed probable that these conditions might have to be altered, for the primary carbonization of the coal would be accomplished not only by the heat of that portion of the retort in which the coal was at the moment situated but also by the steam of highly superheated water gas traveling up from the lower portion of the retort. For the satisfactory production of water gas it is theoretically necessary to increase materially the temperature of the lower combustion chambers, because if this is not done the complete water-gas reaction does not take place and there is likely to be a considerable increase of carbon-dioxide in the gas. Mr. Blundell concludes, however, that if the lower combustion chambers are maintained at a temperature of about 1,350 deg. Cent., then the coke and scurf in the retort are sufficiently hot to complete the water-gas reaction, so that there is no appre-

ciable increase of carbon-dioxide in the resultant gas.

It was anticipated that the maintenance of a steam pressure in the coke-extractor chamber and in the lower portion of the retort sufficient to overcome the back pressure thrown by the charge of coal in the upper portion of the retort would result in the passage of the steam into the incandescent coke in the lower portion of the retort, where it would be converted into water gas, which would subsequently travel upward and carry with it the last traces of coal gas from the base of the retort. The result of this mixing of the gases would be that less degradation of the unsaturated hydrocarbons in the coal gas would take place. It was thought also that the stream of superheated water gas from the lower portion of the retort, passing through the semi-carbonized coal, would wash out the tarry vapors which would otherwise remain in the coal until it had reached a point where these vapors would undergo destructive distillation. The hydrogen in the blue water gas would be at a sufficient temperature and would be in contact with the body of coke in the retort for sufficient time for ammonia to be produced in accordance with Tervet's theory, which has frequently been referred to in these columns. In putting the above theories into practice, after the necessary temperature adjustments had been made, it was found essential, in order that the body of coke in the retort might become sufficiently hot, to reduce the speed of extraction of the coke by about 10 per cent. Several classes of coal were carbonized, but the results obtained with the various grades with the same pressures of steam were widely divergent. Some cokes were acted upon much more rapidly or gave easier passage to the steam than others, with the result that working with a given pressure of steam a much larger proportion of blue gas was formed with some classes of coals than with others.

As regard the results obtained, some remarkable figures were found. For instance, when working with 110 lb. steam pressure the gas amounted to as much as 17,500 cu. ft. per ton of coal, this gas having a gross calorific value of 488 B.t.u., while the proportion of carbon-dioxide was only 2.4 per cent. Whereas in straight coal gas the percentage of carbon-monoxide is only about 8 per cent, in this case it actually rose to 16 per cent, indicating the extent to which water gas was being produced. Another class of coal treated in the same way gave a lower yield of 15,000 cu. ft., but in this instance the gas was of better quality—namely, 515 B.t.u. per cubic foot—the percentage of carbon-monoxide being 12.4. The low-pressure steam at Macclesfield is admitted to the coke chambers at the bottom of the retort through a ⅛-in. nozzle.

In view of the important role which the process of steaming is likely to play in the gas-making methods of the future, it is interesting to compare the results as obtained by the ordinary and the new systems of working. In the following table the coals carbonized under column A were of the Yorkshire variety, while under B they were a mixture of Yorkshire, Derbyshire and Staffordshire coals.

It will be observed that whereas a ton of coal under ordinary conditions yielded 6,385,970 B.t.u. in gaseous form, with the new conditions yielded an amount of nearly 8,000,000 B.t.u., an increase of 24 per cent. In view of the water gas produced, it is surprising to find the coke yielded has undergone a reduction of only 2 per cent, while the extent to which degradation is avoided is well illustrated by the increase which occurs in the tar and ammonia.

It has been feared that the admission of steam to the retort might be directly responsible for an injurious action on the refractory material, but experience at Macclesfield shows that no untoward effect is noticeable. John West, who gave the results of an independent series of experiments in a paper read this month before a meeting in London of the Southern District Association of Gas Engineers, has corroborated Mr. Blundell's views as regards the effect on the refractory material. He stated that at the outset he shared the general apprehension that damage might result, but experience with a special silica material built up in segments has proved this apprehension to be unfounded in spite of the fact that in ordinary water-gas generators there is considerable wear and tear on the firebrick lining. Mr. West explained that in the Glover-West system of vertical retorts a small jet of steam of from 5 to 8 lb. pressure has always been admitted to the coke chambers to prevent the gas from igniting in these chambers when the mouthpieces are open for discharge. There is a distinct difference between the production of blue water gas in the ordinary generator (where the steam, in a wet state, is forced in intermittently and at high pressure between the coke and the sides of the refractory lining) and the introduction of low-presure steam to the vertical retort.

In the former case, owing to the introduction of air, clinker is formed on the sides of the producer, and this, having to be removed by means of clinkering tools, involves a good deal of wear and tear on the brickwork. With the vertical retort the coke first absorbs all the moisture and afterward the steam is superheated and is therefore quite dry before it enters the retort proper. As Mr. West says, this ideal and valuable generator was not designed for the purpose for which it is now so successfully used, and it costs nothing extra to install. There is little question, too, that the self-generated blue gas gives rise to several reactions, as yet unexplained, with the volatile matter of the coal, which tend very materially to liberate more of the hydrocarbons contained in the coke, a fact which explains why more gas, tar and ammonia are yielded.

The new method of workings, which has been rendered possible by the official attitude toward illuminating power, must be an additional item placed to the credit of vertical retorts. Unfortunately, the engineer with horizontal retorts can do little in the matter as it stands at present.

	A—Ordinary Method	B—Steaming
Gas yield per ton	12,049 cu. ft.	15,500 cu. ft.
Gross calorific power	530 B.t.u.	510 B.t.u.
Total incombustibles	10.7 per cent	11.3 per cent
Coke made per ton of coal	13.6 cwt.	13.36 cwt.
Liquor made per ton of coal	25.3 gal. at 10 oz.	32.68 gal. at 10 oz.
Tar made per ton of coal	10.9 gal.	16.61 gal.

If Public Regulation of Utilities Is to Be a Success It Must Be Administered Without Reference to the Popular Favor or Prejudice of the Moment

Samuel Insull Declares that to Permit Political Expediency to Color the Work of a State Regulatory Body Will Be to Destroy that Body's Usefulness to the People and the Evil Consequences of that Destruction Will Reach Far Beyond the Utilities Directly Concerned

We in the utilities business have many grave problems before us, declared Samuel Insull in an address before the Illinois Gas Association. We are living in extraordinary times; we face conditions and problems calling for our best thought.

As utilities men, we must carry our share of the after-the-war reconstruction burden; we must conserve the properties for which we are responsible to their owners, the stockholders; and in doing this we must not fail to maintain and extend the service which these properties render to the public, because maintenance and extension of service is both a duty to investors and to the public and a factor in the State's reconstruction tasks. To meet these obligations adequately we need to take the broadest possible view of our obligations.

In the very first place, we must see to it that the men who went from our service to war, with banners flying, do not have to look for a job when they return. Our duty to the communities in which we live and to the properties which we manage is to place those men on the pay roll first and find them jobs afterward; to see to it that every man who went from our service to serve his country gets as good a position as he had when he left, and if possible a better one.

What May the Utilities Expect from Governing Powers?

The public utilities business as a whole has been hard hit by the war, with selling prices of its products fixed by ordinance, by contract or by commission order, and with prices of labor and material steadily advancing over a period of several years. The difficulties on that side of the business represented in this room have been very greatly increased by the still greater difficulties of other kinds of utilities, particularly the street and interurban railways. Their situation has at times frightened our security holders, who have failed to differentiate between the positions of gas and electric companies on the one hand and street railways on the other. In the street railway business labor is a far more important item of expense than any other. Great advances in wages (in many cases by governmental action), without any relative advance in price of service, have brought street railway properties to a dangerous position. Unless we can convince the public that we are not as seriously affected, we will suffer sympathetically as much as the street railways actually suffer.

This situation raises another disquieting question, namely: whether public utilities of any class can depend upon the governing powers for the calm, scientific and just treatment which is so essential both to the maintenance of good service and to the protection of investors in utility properties. This question is emphasized by the positive statement in the newspapers that the Chicago surface lines are to receive no relief whatever from the public utilities commission, and by the hurried reopening of the Peoples Gas Light & Coke Company's case before the commission, while that company is in the midst of applying recent orders of the commission. And with this discussion comes the further question, voiced in a leading newspaper only a few days ago, asking whether problems of utilities regulation were being considered from the viewpoint of service cost and fair return to the investor, or whether they were being considered with one eye on the Chicago mayoralty campaign and the other eye on the legislative chamber at Springfield.

Regulation Must Be Divorced from Politics

If State regulation is to be a success, that regulation must be divorced absolutely from politics and administered without reference to the popular favor or prejudice of the moment; if the public utilities commission's existence is to be justified, its decisions must be wholly on the basis of cost of service rendered and a fair wage for capital as well as a fair wage for labor.

I have some right to discuss this subject. I was the first man in the utilities business in this State, I believe, to advocate the regulation of public utilities. In 1898, as president of the National Electric Light Association, I urged regulation in place of competition as a means of stabilizing the utility business, developing service adequate to the needs of the public and lowering the cost of that service.

Regulation has shown, wherever given a fair trial, that it is sound in theory and workable in practice. Whenever given a fair trial it has worked better from year to year. But regulation will not work unless applied justly, in complete harmony with the fundamentals of the theory of regulation.

The Obligation Must Be Taken with the Right

The right to regulate must carry with it the obligation to protect; and this obligation to protect is not

subject to reservations or evasions. The Public Utilities Commission of Illinois was created and clothed with full regulatory powers for the protection of the citizens of the State, whether those citizens be producers of utility service or users of utility service. To sacrifice the interests and rights of either class to those of the other is equally reprehensible and unjust; and when injustice enters anarchy is at the threshold.

Whether the utility to be regulated is an individual or a corporate creature of the State, corporation and individual are equally entitled to protection, just as the smallest user of gas or electricity or other public service is entitled to protection; and until we can show the citizenship of the State that justice is not done unless we, as well as our customers, are treated justly, we will have failed in our mission as public utilities men.

Permitting political expediency to color the work of a State regulatory body will destroy that body's usefulness to the people, and the evil consequences of that destruction will reach far beyond the utilities directly concerned.

Take Illinois as an example. How many people—how many of us utility men, even—realize the importance of this subject to the State as a whole?

How Capital Expenditure Will Compare to State Road-Building Budget

The electric light and power, gas, and street and electric railway companies of Illinois represent $850,000,000 of invested capital. They have a gross income of $175,000,000 a year.

The new capital expenditures of these Illinois companies in this year of 1919, according to the budgets that have already been made, will be between $65,000,000 and $70,000,000; will be, that is, PROVIDED *their credit is maintained* (by means of adequate rates) *on a basis that will permit them to secure the necessary funds.*

Think of what that one item means to the reconstruction problems of the State and to the task of providing work during an anticipated period of acute unemployment in general industry!

Let me make a comparison. We have heard much of the State's road-building program as a factor in reconstruction and in providing employment; yet the State has provided only $60,000,000 for road building and its plans provide for spreading expenditure of that sum over not less than a five-year period. In those five years the public utilities will spend for new capital work in this State, provided their credit is maintained, not $60,000,000 but probably all of $450,000,000.

These companies have 45,000 employees, of whom 8,000 to 10,000 were in the fighting forces of the country during the war. They have, it is estimated, upward of 35,000 stockholders, of whom 25,000 are citizens of Illinois; and there is probably an equal number of the holders of our senior securities, or a total of 50,000 stockholders and bondholders, who are citizens of this State.

The gas and electric companies of the State serve 1,700,000 customers. The street and electric railways carry 2,000,000,000 passengers each year.

In the light of these figures no words of mine are needed to emphasize the importance of these public utility properties in the commercial, industrial and social fabric of the State. Unless these properties can live and prosper there will be no prosperity in Illinois.

Rates Fixed on a Scientific Basis

While the protection of this great public utility interest is, therefore, or should be, a matter of concern to all of the people of the State, it is the particular concern of us who manage these properties. Think what it will mean to us if we can bring home, to the communities in which we operate, the significance of the figures I have just given you.

Now, it is our special job to get at the people of those communities; to get at our own 45,000 employees, our own 50,000 stockholders and bondholders, our own 1,700,000 customers, and the customers of the electric railways—the people we serve and who know whether our service is good or bad.

We ought to bring home to them that rate making in our business is not a simple matter of fixing a flat price for a product or a service; that a proper system of rates has to be adjusted to varying classes of service and to the conditions under which that service is rendered; that proper systems of rates cannot be worked out scientifically when politics enters; and that an enormous field for development will be opened alike to industry and to ourselves by proper systems of rates.

Limits of the Industrial Load

One of my young men—I do not know whether he was dreaming or figuring, or just happened to put the decimal point in the wrong place—has worked out the conclusion that the Peoples Gas Light & Coke Company would be doing an industrial gas business of $90,000,000 a year if it were supplying gas to all the industries in Chicago that can use it to advantage. That may seem a wild dream. But I know that the Commonwealth Edison Company, notwithstanding its large business, is doing less than one-third of the possible electrical business in Chicago; and that it would be entirely possible to do $90,000,000 of electrical business a year instead of $28,000,000, as this year, if we could get all of the available business and the plant to take care of it.

If that is so, the same figures are likely to apply eventually in the gas business, as the industrial field is more generally developed and we are permitted to work out rates that bear a closer relation to the actual service rendered to each customer, with the charge to him based upon the service rendered.

Publicity, but Not in the Gumshoe Manner

I am a great believer in publicity. I believe it is our duty to the properties we manage, to the stockholders, who own them, and to the communities they serve, that we should enlighten those communities on the situation. I believe in doing it not in any gumshoe way, but openly and boldly. I believe in presenting the facts to the employees, whose interest is just as vital as that of the managers; to the citizens of the State who are owners of the properties; to every customer of a gas company, an electric light and power company, or a street railway.

The public utilities have the means of getting at their customers, of getting at nearly every household

in the State. If that is done often enough, and vigorously enough, and fairly enough, you will find the newspapers taking notice of the facts. If that is done the politician in quest of votes, whether as a candidate for mayor or other local office, or as a candidate for the Legislature or for the highest executive office in the State, will be forced to discuss utility questions on the basis of the economic facts and not by drawing on his imagination to create prejudice against a great industry.

We are on the fortunate side of the public utilities business. The electric business has suffered some during the war; the gas business has suffered more; both are recovering and can look forward to years of substantial progress. The street railway business is in a very serious condition, especially in Chicago and the larger cities where heavy wage advances have been made by the Federal war labor boards. It is up to us to do our part in presenting the facts, not only of our own business but of the street railway business, so that justice may be done and promptly done. A great English statesman once said, "Justice delayed is justice denied." That is undoubtedly the case of the street railways to-day.

Control of public utilities by means of State regulation is at a crisis in Illinois. It must weather this crisis if it is going to establish itself in a way that is fair alike to the public and to investors, and so become a permanent and respected function of our State government. And if we, openly and boldly, do our share in this crisis by challenging the fallacies and misrepresentations uttered against the public utilities business, we shall be doing a service to the whole State and to future generations of its citizens.

With the Return of Alsace-Lorraine France Will Become Dominant Factor in Future Steel Industry of Europe

Frank H. Probert, consulting engineer of the U. S. Bureau of Mines, Department of the Interior, and dean of the College of Mining, University of California, member of a special American commission to investigate the damage done by the Germans during the war to the coal and iron mines and steel works of France and Belgium, after a personal investigation has just returned to Washington with a first-hand story of the almost unbelievable atrocities of the Hun in the destruction and wreckage of the industrial life of France and Belgium.

Mr. Probert, together with Dr. F. G. Cottrell, chief metallurgist of the Bureau of Mines, and George S. Rice, the chief mining engineer, made up the American mission sent to Europe last January on the invitation of the French High Commission. The purpose of this mission was not only to investigate the damage done but to advise with the foreign officials concerning reconstruction and rehabilitation, and assist in any way possible on matters pertaining to the mineral industry.

Mr. Probert visited the iron mines of Nancy, Briey, Longwy and Luxemburg, coal mines in the Province of Saar and the coal district of Pas de Calais. Details of the investigation will be published in an official bulletin of the Bureau of Mines within the next three months, until which time no detailed statement is permissible. Letters of introduction from M. Loucheur, Minister of Industrial Reconstruction in France, assured the mission proper recognition, and every facility to expedite the work was given by the French Government officials. On instructions cabled by Secretary of War Baker to General Pershing, rapid transportation was arranged and such other assistance as needed was placed at the disposal of the representatives of the Bureau of Mines. In no other way would it have been possible in so short a time to get as comprehensive an insight into the present-day condition of the mining industry of the western front.

Mr. Probert, in a preliminary report to Van H. Manning, Director of the Bureau of Mines, has the following to say:

"Early in the war the German hordes swept southward through the iron basins of French Alsace and Lorraine, and for nearly four years this renowned mining area was held and exploited by the invaders. Many of the employees were made captive and compelled to work in the mines under German direction. The international boundary between France and Germany was drawn in 1871 to give the victor of the Franco-Prussian War control of the iron fields, but since that time scientific development, guided by a better understanding of the local geology, exposed for France a greater ore reserve at lower horizons than that of Lorraine Annexee. With the return of Alsace and Lorraine to the motherland France will become the dominant factor in the future steel industry of Europe. During the German occupation the iron mines were not intensively exploited because of the necessity of recruiting into the Teuton army every able-bodied man and on account of the large accumulation of war minerals in preparation for the war. The actual physical damage to the iron mines is relatively small when compared with the destruction of the coal fields of northern France, which was as reprehensible as it was complete. Only in a few cases, where pillars have been robbed, is there any collapse of underground workings in the iron mines, but the equipment, both surface and underground, has been misused, and where ore has been mined the lack of development will defer realization of capital until the exploratory work is sufficiently advanced to admit of daily output approximating prewar conditions. The mines are not seriously crippled, but what of the steel plants in which the iron ores are smelted? No such atrocity was ever perpetrated against the industrial life of any community. Magnificent plants, comparing favorably with anything we have in the United States, are now but a tangled, twisted mass of structural steel and broken stone. The willful demolition was scientifically planned and systematically carried out. This after the removal of all such mechanical and electrical power units as could be used in Germany. The maliciousness and efficiency with which this crime against French industry was conducted is almost unbelievable.

"In the coal districts of Pas de Calais and Nord, a sector fought over from the beginning to the end of the war, changing hands frequently, bombarded all the time, all surface structures, whether of town, village or mining enterprise, have been razed. This may be legitimate warfare, but, now that the guns are silenced and the frenzy of combat is past, it is horrible to look upon. Arras, Douai, Bethune, Bapaume, Lens, Loos, Courriere, centers of coal-mining

activity but a few years ago and the mainspring of French industrial life, are gone, but the indomitable spirit of France survives and already plans are laid for the future. Bruay, at the western edge of the known coal field, was not in the fighting zone and its output has been steadily maintained, but going eastward the frightfulness is more and more appalling, for the hate of the Hun left its mark on the mines during his forced retreat. The coal measures are overlain by water-bearing strata, necessitating special methods of shaft sinking and support to keep the mines dry. The steel lining of the shafts was dynamited, letting in the quicksands and flooding the underground workings for many miles. In the entire Pas de Calais region it is estimated that 120,000,000 cubic meters of water must be pumped before mining operations are resumed. Having flooded the mines, the headframes and surface equipment were systematically dynamited, the twisted debris in many cases filling up the demolished shafts. It will probably be five years before this coal district can be rehabilitated and twelve to fifteen years before it gets back to normal prewar output. The first great need is for building in which to house the workman.

"The Saar coal fields were visited by the Bureau of Mines officials. Here, in striking contrast to the mining districts of France and Belgium, the coal industry is at its height. German workmen and German engineers are still employed, but under the direction and supervision of French officers. A spirit of unrest is apparent everywhere; the suspense of the peace negotiations, uncertainty as to indemnity to be exacted and lack of food are telling on the already broken morale of German workmen. Unfortunately, the Saar coal does not give a desirable metallurgical coke to the French and the blast furnaces now running are working inefficiently. Westphalian coal is much desired, and a special committee of which George S. Rice, of the commission, is a member left for Cologne to investigate the possibilities of early shipment from Westphalia to France.

"The French attitude toward her allies is an interesting psychological study. France has been hurt, really hurt, by the long conflict. She has suffered perhaps more than any other nation; the battles have been fought mostly on her soil; her manhood has been drained of its best and most productive blood; her industries, her economic mainsprings, have been ruthlessly destroyed. These two classes of French though are desirous that France rebuild herself, financed by German indemnity. They seek neither money nor advice from others; the irrepressible spirit will be all-sustaining. Directors if industry, mine owners and employers of labor, possessed of the same love of country, look on the problem from another viewpoint. They claim that money borrowed from other countries at reasonable interest rates, new equipment for mines and plants purchased from America for early delivery, will admit of an earlier return to prewar scale of operation and the higher immediate cost will be more than offset by the earlier realization of profits from natural resources and raw materials.

"It would be presumption on the part of an American mining engineer to suggest improvements in methods or practice in French mining. The French engineers have long known their own problems and have solved them in accordance with their system of finance and amortization. Their mines are developed and equipped with the idea of permanent industry, and unless there is serious labor unrest and extraordinary advances in wage scales the old French practice is peculiarly suited to French conditions. Their policy is progressive. There is constant search for new mineral areas or extension of proven deposits. French Lorraine has greater iron-ore reserves than those of Lorraine Annexee, and just before the outbreak of war drill-holes had shown the extension of the coal measures of Pas de Calais to the south. Iron and coal are complementary minerals. France has them both in larger quantity than in 1914, and when her reconstruction program is carried out the steel industry will be among the first assets of a land that has suffered greatly."

Illinois Supreme Court Upholds Commission Jurisdiction Over Municipal Plants

In the case of the Springfield Gas & Electric Company against the city of Springfield the Supreme Court of Illinois handed down a decision April 15 holding the clause in section 10 of the public utilities act, exempting municipally owned public utilities from the operations of the act, to be unconstitutional. The decision of the Sangamon County Circuit Court was reversed. The decision in this regard was as follows:

"The persons who use the products of service of public utilities are entitled to the benefits of the public utilities act and are entitled to its protection against extortion, discrimination and inferior service by whomsoever furnished.

"If a customer is oppressed by extortionate charges or discriminated against by wrongful rate or inferior service, the wrong is the same whether done by a municipal corporation or a private corporation."

Agents of Chicago Company Posed as Commission Investigation Claims Engineer

Hearings in the case of the Peoples Gas Light & Coke Company, of Chicago, before the Illinois Utilities Commission are being continued. A. S. B. Little, chief engineer for the commission, has been occupied for several days with testimony regarding complaint cases. A matter much emphasized by the commission has been the charge that agents of the company have posed as investigators of the public utilities commission before Chicago housewives for the purpose of inspecting fixtures and adjusting disputed bills. The company's investigators so accused took the stand and denied the charges. They have all been in the service of the company for periods ranging from twenty to thirty-five years. The accusation flickered down in most cases to the statement that the housewives "were under the impression" that the investigators were from the commission.

Mr. Little will continue his testimony for some time, when it is expected that engineers for the commission will testify regarding conditions which they have found at the company's plants. This testimony was demanded by Timothy Mullen, attorney for the company, who refused to allow Mr. Little's description of conditions at the plant to go uncorroborated. This probably will conclude the commission's evidence, and the gas company will then begin its side of the case.

Perfection in the Way of Uniform Pressure at the Consumer's Burner Can Be Attained Only by High-Pressure Transmission

C. C. Boardman Declares that Pressure Is the Real Service a Distribution System Has to Supply — Piecemeal Construction

The past four years have afforded the present generation of gas men a wealth of first-hand experience which should be of great value in facing the problems of the future, declared C. C. Boardman in a paper presented at the recent annual convention of the Illinois Gas Association. Conditions have changed so rapidly that few have had the opportunity of correlating their experience under one extreme before they were face to face with conditions of the opposite extreme. Nineteen hundred and fourteen ended a period when supply and demand of raw material, labor and product were about equal. Large gas companies had curves prepared showing their expected sales, increase in meters, miles of mains and additions to plant. Smaller companies were running in a rut that allowed them to take on the business that might turn up or get along if it did not.

Why Construction Was Postponed

Nineteen hundred and fifteen began with doubtful prospects. Routine construction was held up pending a stabilizing outlook. By 1916 costs of material and labor were climbing skyward and construction was again postponed for the expected drop. At the same time sales were increasing out of proportion, and 1917, with our entry into the war, brought not only higher costs but almost impossible delivery and demand for product at an ever-increasing rate.

The conditions of 1917 and 1918 affected different gas companies in proportion to their effects on the communities served. In general, of the three main departments of a gas company, the distribution department, including plant and personnel, experienced the most difficulties in "carrying on." The manufacturing end had idle plant or standby apparatus that could be put into use. Their raw material might be scarce or of varying quality, but at the same time more allowances were made by the consumer for variations in the finished product. The selling department was only limited by the available material to sell, and got out of difficulty, in many cases, by selling out and closing up shop.

The distribution department had to take whatever quality of gas the works made and deliver it in whatever quantity the sale called for, with a plant of fixed dimensions, a curtailed force, adverse weather conditions, and only one variable which allowed for expansion, namely, pressure.

Delivering Pressure Fixes the Efficiency of Appliances

Delivering pressure fixes the efficiency and satisfaction of the gas-consuming appliances, and the object of the distribution system should be to maintain the correct pressure at the appliance at all times. Perfection in this regard can only be obtained in practice by high-pressure transmission and an individual governor for each consumer, following the electric practice of high-voltage systems with transformers. Unfortunately, gas distribution must be carried on under low pressure in most cases, partly on account of operating costs and partly because the low-pressure systems are already installed and cannot be converted. Most gas-distribution mains in cities having less than 10,000 meters are the results of individual extensions made over a long period of time to take on new business, and the size of a main once fixed has been extended the same size indefinitely, or as long as business was in sight in the next block. The result has been that additional feeder mains were seldom laid for further business except as streets leading from the works were paved or when service was so poor that something had to be done to stop complaints. A system of this sort was usually just about adequate for the current sales. The advantage was low initial investment for the ordinary run of expected business. A thousand dollars could be invested in a street and another thousand dollars put out at 6 per cent interest; if consumption picked up in the locality the main could be replaced with a larger one in twelve years with the two thousand dollars resulting from principal and interest that had been saved the first time. If consumption did not pick up, the second thousand dollars was still available as cash. The disadvantage was that the service was not of the best and that any large industrial consumer had to be turned down or taken on at the risk of jeopardizing the supply for the surrounding territory.

I make the above division of a 10,000-meter town because by the time a town goes over that mark it has so far outgrown the main system that a comprehensive survey will have been made and a system of larger transmission mains laid out in connection with intermediate-pressure booster governors or a high-pressure loop to supply direct high pressure to the outskirts and booster governors at intermediate points.

Legal Allowances Too Broad for Good Gas Lighting

Our State commission defines passable low-pressure service as a meter-outlet pressure between 2 and 8 in. water-column pressure, with a maximum variation during twenty-four hours of 100 per cent. Domestic heating appliances will give satisfactory service within these rules, but lighting appliances will not give good results on such a variation when compared with electric service with an allowable variation of plus and minus 5 per cent.

With these figures as a guide and the objection to putting money into construction in advance of benefits to be derived, most distribution systems were being used at close to full load consistent with fair service. When times such as the last two years arrived, even piecemeal construction to increase capacity was out of the question in many cases and pressure was resorted to to make up the deficiency. I wonder how many members of this association that did this recalled the two admirable 1912 papers bearing on the subject. A few have been well on the way of Mr. Battin's "Two Pounds at the Tip," and probably wished they had made better use of Mr. Hirst's outline of methods to be followed in laying out a high-pressure system.

Pressure the Real Service a Distribution System Has to Supply

Pressure is the real service a distribution system has to supply, and if it can be maintained uniform sales will come easy and complaints will be at a minimum.

As an illustration of doing added duty with a main system and to show pressure changes involved, I have assumed a case of a holder station in the center of a territory about one mile in diameter. This might be compared to a conventional drawing. It will not be exactly like any town, but by visualizing certain corners and main sizes, and stretching or contracting the limits, the problem can be made to fit a large number of cases.

Assume 6,000 meters; 600,000 daily sendout; 80,000 cu. ft. per hour peak load; four 8-in. trunk mains leading from the station radially, with branches every 300 ft. The pressure problem can now be worked out for one of these 8-in. mains. It will have to carry 20,000 cu. ft. of gas per hour away from the holder governor at peak load. Each succeeding 300-ft. branch will draw off an increasing portion of the gas because the area to be served increases as we leave the center.

A study of the pressure gradient under various loads is shown on chart No. 1. The horizontal lines represent distances 300 ft. apart. The vertical lines represent flow of gas through the mains and show the per cent of the total taken off at the intersections. In addition a scale at the bottom is graduated to represent water pressure in inches. The curves show the expected pressure at the various intersections under different load conditions.

Curve A shows pressures along one of the 8-in. trunk mains when 20,000 cu. ft. per hour leaves the governor through that main. If 3 in. is to be maintained at the end, the governor must be set at 4.8 in. The variation in pressure between maximum and minimum consumption at the end would be 1.8 in. if the same pressure is carried at the governor for twenty-four hours. To lower the variation all along the line at different hours, a model chart should be followed at the governor with 4.8 in. as the highest and 3.5 in. as the lowest graduated between to follow the known rate of consumption. This maintains the pressure between 3 and 4 in. at all hours at distances greater than 600 ft. from the station governor, and the system might be called satisfactory.

Curve B may be of interest if the works is doing added duty by changing to water gas from coal gas. It is based on the same condition as curve A. The

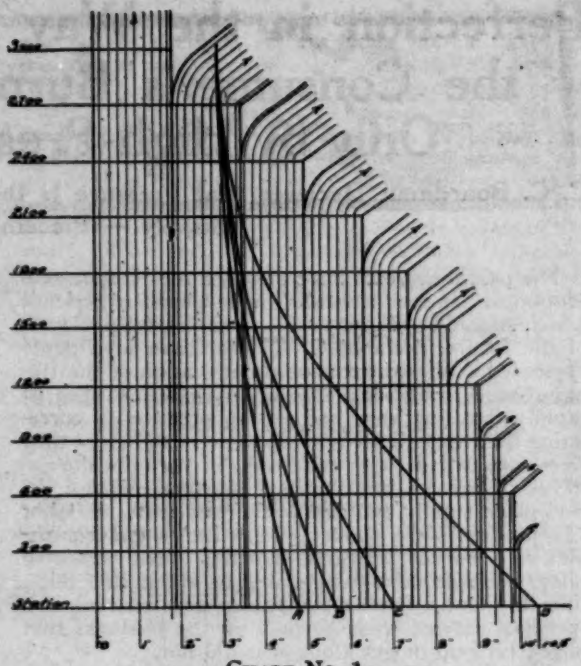

Chart No. 1

governor must be set at 5.6 in. to maintain 3 in. at the end during maximum consumption.

Curve C represents pressure when the maximum demand is increased 50 per cent. Governor pressure is 7 in. At minimum consumption pressure could still be dropped to 3.5 in. and the territory near the plant would be within the 100 per cent variation.

Satisfactory Gas Lighting Out of the Question

Curve D represents pressure when the maximum demand is doubled. Governor pressure, or more likely blower pressure, must be held at 10.5 in. to maintain the 3 in. at end of line. Minimum load pressure should not be lower than 5.25 in.; this supplies the entire system with a fluctuating pressure that makes satisfactory gas lighting out of the question.

In actual practice, without a blower, the peak-load pressure would probably not be maintained at 10.5 in. and the result would be a lower pressure on the end of the line that would result in insufficient supply at peak-load hours. A great many plants have faced this condition during the last two years, some raising the initial pressure as high as 16 to 18 in. with blowers in order to maintain a peak-load supply—with the result that they have held the cooking and heating business and lost the lighting business.

The installation of intermediate-pressure booster mains increases, to a certain extent, the flexibility of a low-pressure system, but unless blowers are installed on these mains they reach their limit when the carrying capacity of the mains is reached with holder pressure at the inlet. A blower between the holder and the consumer at once brings in the chance for interruption due to failure of motive power or attention of operator. The blower may not be operated at all hours, with the result that the district governors will be forced to contend with sudden initial

(*Continued on page* 364.)

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As the Journal Views It

More Than a Pat on the Back Involved in Encouraging an Employee

Few of us begrudge commendation to an employee when he has done anything meritorious. We have learned that it pays to adopt an appreciative attitude. It is costly to do otherwise.

But with many of us this appreciative attitude, though we may ourselves be unaware of it, is largely artificial; is mere pose. Deep down into our hearts the doctrine has not entered.

More than a pat on the back is involved in the encouragement of an employee.

Glowing words sound flat indeed to the employee who is bitterly aware that the company has never once given him a raise in wage that he did not compel.

Of what avail to be called a genius when the whole attitude of those who pass upon his recommendations seems designed essentially to devitalize the whole possible results that genius may achieve.

What an absurdity to glow over the individual achievement when cold water is dashed on every idea he presents; when, in fact, the idea upon which that achievement was founded only had a chance to be tried out because he fought for it bullheadedly to the degree that he fought us down, still hostile, until he forced us to give him a chance to try it out.

And what small obstacles we put in his way some-

times! What picayune economies impel us to hold him back in the attainment of results he could attain.

Take, for example, the difficulties we put in the way of his developing subordinates—an organization.

He knows the value of the subordinate under his direction. If he doesn't, we should speedily dispense with him.

He knows, likewise, what the work he or she is doing is worth. He knows the value of the work he or she could do if properly stimulated to it. And he knows that the employee knows it.

Yet how often have we, ignorant and without understanding, obtruded our viewpoints when he endeavored to give such subordinates an increase in wage!

Our whole objection was based on a disinclination to spend a few more dollars. We didn't tell him this, though. We were ashamed to.

We evaded by the miserable pretext of arguing that the work was not worth the value he set upon it. And in his eyes we appeared small indeed.

He knew we had no knowledge of what that particular work was worth. At once he saw through our small pretext. And immediately we lost a most valuable asset—the trust of a principal employee in his employer.

In his eyes were were revealed in all our stark ugliness. If we stooped to be unfair to another, even though a minor employee, what confidence could he have that we would not, if we dared, be unfair to him?

There is no form of discouragement to an ambitious employee more utterly demoralizing than this: a consistent attitude of making difficult his efforts to develop a co-operative and willing spirit within his assistants.

No principal employee can be sufficient unto himself alone. He knows, as we know, that the greater part of his results must be produced by his assistants. Render it impossible for him to develop assistants with interest in their work, and he cannot but feel impotent in his own work, and, with such a feeling deep-seated within him, you've got an employee who is not much more valuable than the wooden chair you provide for him to sit on.

It is not the intention to recommend in this respect a policy of "the sky's the limit" in the matter of subordinate employees' wages.

Give your department head a specified sum per year. Beyond that point keep your hands off. If he chooses to spend it all on one employee, that is his affair. It is for him to determine how it is to be spent to obtain the best results. And it is by the latter that you must judge him. If he doesn't produce in proportion to the expenditure, fire him.

No principal employee of any character or confidence in himself would want better than this.

Encouragement to the employee pays big. But mere pats on the back do not constitute encouragement. You can afford to be liberal with such because they cost nothing. But, in addition, avoid petty interference.

Convince your employee that you've got your shoulder to the wheel, too, in helping him to secure results. Convince him that the only limit to the help you stand ready to give him is your resources and the time you can afford to take from other no less pressing responsibilities.

The Stuff That Is in You

As we view it the call for subscriptions to the Victory Liberty Loan is a real test of our citizenship. Our subscriptions to previous loans, however worthy, may have been the outcrop of many factors. The real quality of our citizenship may not have been tested at all.

We may have, unconsciously, subscribed through the mere motive of following the throng. Our effort under close analysis might be found to have been merely prompted by a species of hysteria.

Now we are asked to buckle down in cold blood to pay the bill for a victory that has been won. More to pay for things necessary to the accomplishment of that victory, but never used and in a large part worthless.

There is little now to stir up our impulses. They have been so stirred that to-day, and for some time to come, it will take something mighty explosive to even lift our eyelids.

We have no specter hanging over our heads to scare us. Our families, our properties and ourselves are probably safer from the possibility of foreign aggression than they have ever been before.

It is merely a case of personal honor translated into national honor. Most of us are finicky over the possibility of people getting an idea that we "beat" our creditors.

That roll of tar paper in the cellar. We intended using it when we bought it, but we've since decided the shed isn't worth roofing. Those unused vegetable seeds. The yards of dress materials our womenfolk intended to make up into garments. Waste! Good stuff when bought. Good stuff still; but, insofar as we are concerned, waste.

Yet never once did the thought enter into our minds that we should not pay for it. The merchant who sold it could not be expected to foot the costs of our changes of mind or needs.

We cannot likewise be individually upright in our dealings with creditors and nationally shifty and dodging, and flatter ourselves much on our business probity.

The Necessity of the Commercial Man's Selling Himself to His Own Company the Theme of the Evening at the April Meeting of the Gas Sales Association of New England

Fred L. Carter Urges Those in Attendance to Put Shoulder to Wheel to Make Their Companies Places of Opportunity — It Pays Individually and It Pays the Company

The regular meeting of the Gas Sales Association of New England was held at the Boston City Club on the evening of April 11.

The paper of the evening was an address by Fred L. Carter, Jr., of the Walworth Manufacturing Company. Mr. Carter's paper follows:

Unconsciously for the most part we sold ourselves to our own companies to a certain extent when we talked things over with the company and arranged to enter its employ. On the one side the reputation and personality of the company and of the individual members whom we chanced to know attracted us. We called and were interested by the man we talked with. The company was attracted toward us either by reputation, or by references, and became interested after the interview. The final result was a sale of our services for a recognized stipend.

In other words this was a sale pure and simple—just as much so as if the commodity purchased was a piano or an auto instead of services.

In all too many cases selling ourselves stops right there.

Most firms have developed a certain business policy that is reflected in their various activities inside and out. This policy is the result of their growth and experiences. It is something that cannot be put into words but must be lived with to be thoroughly understood. Perhaps this is so because each individual reflects this policy from the angle of his own individuality. At any rate we enter the new environment with our own personality and ideas and begin our work. Eager to show our worth we try to start something at once that will be of use to the firm and will build up our department. Perhaps we offer a sales campaign to the finance man. Because it is a pet idea of ours and we have become so familiar with it that we forget to explain it thoroughly and logically to him; perhaps we have not learned the best angle to approach that particular man; perhaps the idea is bully but needs certain preliminary steps before that particular company is ready to use it. For any one of a dozen such reasons the idea fails to get across. The result is a certain dampening of our ardor, combined with a touch of rancor that such a wonderful proposition should be turned down. On the side of the financial man there is a feeling of disappointment that the new man did not show better—merely because we did not sell ourselves first and the idea afterwards.

Impossibility of Making Some Men See a Good Thing

But you say it is impossible to make some men see a good thing. While this is true to the extent that we did not make him see it, there are many ways of human appeal that will attain this result.

Most men are fair-minded—but want to be shown. The financial man isn't interested in seeing how little he can spend, but in learning how he can make the most return of what he does spend. He is the guardian of the company's money and faithful to his trust; he must be convinced that the plan is safe, that it will help his department as well as the sales department, and that it will net a better return than interest at the bank. We are undoubtedly just as cautious as he when it comes to investing our own savings that must provide for the comfort of ourselves and our own families in the future.

He Must Be Shown

But he must be shown, and the best way to get that man is to sell him our enthusiasm, our loyalty, our spirit of helpfulness, in fact sell him ourselves entire till he has faith that we are helping his department and the company, as well as our own department.

But you say this is merely the spirit of co-operation! True, but there isn't a word in the English language that is preached more and practised less. It is something we want, we believe in, we hope for, but in many cases we do not seem able to achieve. There are so many different attitudes of the man higher up toward the man lower down. There is the type of man who never says or does anything against a subordinate and who for this reason wonders why a man should hold any

hostility toward him when the man knows he could work up to a much better position if he could have a little more constructive criticism here and a little boost there, in place of that chilling aloofness. There is the type of employer who is so loaded down with details that anything new means confusion to his mind, and who consequently is against anything new, and yet he is constantly surprised that he doesn't get better co-operation, not realizing that he, himself, may be the most deadening influence in the company. There is the type of boss who insults the intelligence of his men by his cupidity in trying to get man-size results on boy's pay. There is another type that really wants to co-operate but he doesn't know how, etc., etc. There are just as many different types as there are personalities of human beings.

Pitfalls in the Endeavor to Maintain Dignity

Considerable study of this relation between boss and man has led me to believe that there are a few simple rules that cover pretty much the entire field:

First, and above all else, *be human.* So many feel that their position carries a certain dignity—and the minute we think dignity, we overdo it. Happy is the boss where men dare tell him what they honestly think. It may jar him at times, as in the instance of a friend of mine who boasted that his firm kept their help a long time. One day he was told flatly by an assistant, who knew the real conditions in that company, that anyone who stayed beyond a certain time was either too timid to make a change; were tied down by a family or had a soft job and didn't want a real one; that any man there with guts got out of that company in a short time. The truth hurt—but only because it was the truth—and many, many times men can put us wise to conditions that we little suspect—if they are free to come to us, instead of being argued with and browbeaten.

The boss who talks things over man to man with anybody in his employ has gone a long way toward securing co-operation. He is sincere, and insincerity can be spotted a mile off.

The second most important factor in securing this happy relationship is expressed in the following:

Co-operate Down—Co-ordinate Up

It is a law of human nature that the less educated a man the more suspicious he is and the less he knows how to achieve certain ends; even if he wishes to co-operate, he is often at a loss how to do it and needs to be shown. The man higher up must stretch down his hand to help if he is to get in contact with his men. If he talks co-operation and doesn't practise it his men know it is bunk, ridicule it, and finally become more or less sore at the insult to their intelligence.

But if he is human, and if he really wants to co-operate, he gets right down to the level of his men, talks over ideas with them, pays as he goes. Mark that last well. *Pays as he goes.* When John comes to him with an idea that is going to earn money for the business he doesn't promptly hog it all but gives John a little slice of reward—it may be money or honorable mention. Do you get the point?

Sharing the Glory

He has absolutely convinced that man that it pays him, as well as the company, to bring in ideas that help the company. Compare John's frame of mind to that of Bill, who went to the foreman of another company with an idea better than John's This second company used the idea, made money by it and did not even thank Bill for it--and in the place he worked before they would not even listen to his idea at all. Consequently Bill's attitude of mind toward his company is something like this:

"Stingy pigs to swipe my idea and not pay me a cent. Damify'll give 'em any more of *my* ideas."

And the pity of it all is that Bill's boss is directly to blame for this man's attitude of mind and deadened ambition.

Closely allied with co-operation is co-ordination, because the class of work given a man to do has everything to do with his development. The best illustration of the proper co-ordination of work is like the screening of coal where the dust runs through the first screen, pea coal through the second, nut coal through the third, till all the grades are sorted.

Putting the Right Job on the Shoulders of the Right Man

Just so in an office, the purely mechanical work ought to be done by machines or as machine-like as possible, the cheap work by cheap clerks and constructive work by the higher-priced men.

And don't hold a worker back in any of these grades when he is competent to do a higher grade of work. If you do he will leave or will settle down to an ambitionless humdrum that takes more or less pep out of the entire force.

The best advertising a company can have is to be known as a place of opportunity, where men are hired for what they can be taught to do—not merely for what they have done, and where they are taught and helped to advance in usefulness to themselves, and the company.

Who Pays?

But compare this condition with the usual office where they make it a practice to be about half a clerk shy in each department and the poor deluded mortals think that they are saving money on the payroll. When the billing department is two days behind, who pays for that subsequent delay in cash receipts?—*The boss!* Who pays for the subsequent delay in sending out statements and additional delay in cash receipts?—*The* boss! Who pays when the stenographic department is two days behind so that there is often a second letter to answer because the answer to the first one has not been received?--*The boss!* But the total effect, inside and out, with customers and with employees, is as far-reaching as the circles caused by a pebble on the calm surface of a pond. Outside a firm is known as prompt or sloppy—and is paid in the same way. Inside they are known as snappy or always behindhand and many capable employees get disgusted at having their efforts nullified and go where their services are appraised at their true worth.

Helping Employees to Earn More

How long can a clerk do constructive work if he has to wait for this or wait for that, or else pitch in and do it himself. Mind, I am speaking of policies now, not of accidents where all of us have to help out at times. But how much does a firm gain in keeping a $100 man one-quarter of his time on $25 work, or a $25 girl on $10 work?

Don't growl and say that your people don't earn what you pay them.

Help them to earn more for themselves and you, co-operate with them, co-ordinate their work, see that they are rewarded by bits of better work than their usual jobs, help them to lift themselves out of the rut into a better job. Be a patient teacher and ten to one you'll learn a thing or two that you didn't know before.

I am reminded of another instance when a man who had had but nine weeks of factory experience in a new line was made sales manager for one of the departments. There were nineteen applications, but where all of the applicants were new to that work his former experience had been more rounded. The first day on the job three different men came to him and said: "Now, Jones, we know you're new to this work, so any time you're stuck just come to us; we'll help you out."

That attitude didn't just happen in those three men but was an expression of helpfulness that was reflected by all from the president down.

Can you imagine anything more stimulating to a new man than that—and didn't he work his hardest so as not to be a burden to the bunch but to relieve them as much as he could?

"But," you say, "why fire all this at me, I'm not the boss?" True, but there is not a man here to-night but who has people over him as well as under him and its unfortunately true that it's easier to adopt a wise bearing toward our superiors than toward our inferiors. Did you ever stop to think that you attract to yourself about the same kind of stuff as you hand out. A surly man attracts snarls, just as surely as one looks at him; chases away the smile from the faces of his companions. Be human, help your subordinates and you will be surprised and delighted to see how much we can learn in return and how much easier it becomes to please those above us.

Sow the Seed and Reap the Harvest

One of our best-known executives, who, before he was thirty received a salary of $25,000 a year, once said that the secret of his success was that he knew how to gain co-operation from those under him and how to serve intelligently those over him.

How easy it is to think that just because it is *our* department that all of our men have that same loyalty, devotion and enthusiasm for it that we have. Don't think that these qualities grow on trees and that they develop themselves. Teach them, prepare the ground, sow the seed, pluck the weeds and reap the harvest.

To-morrow morning ask yourself: "Why should that employee be crazy about me? What did I ever do for him? Have I advanced him as far as he can go or have I left him bereft of all enthusiasm in a rut that he fears he can never climb out of? Answer these questions honestly.

Then consider the other department managers. "Am I really liked by them or am I tolerated on account of my position?" Remember department heads will do a lot for a friend that they will not bother to do for a mere acquaintance.

"How do I stand with the Old Man?" No disrespect, the Big Boss is always the Old Man, be he 30 or a 100. "Does he understand my ideals and inspirations—does he feel my enthusiasm and loyalty, does he appreciate my common sense, because I don't make too many bad breaks before him?"

And then run over in your mind the points of this address. Am I human with my associates—have I sympathy and understanding for their ideals and aspirations—am I helping them to rise to a higher plane of work and happiness—am I co-operating down but co-ordinating up—am I doing all I can to make my firm "A Place of Opportunities?"

"In fact, have I sold myself entire to my company?"

After the paper had been read and heartily applauded, William Gould, Governor, spoke on the universal applicability of the principles set forth by Mr. Carter and asked the members present to realize the wonderful opportunities for increased co-operation and loyalty which the active employment of those principles would bring about. He then announced that he was going to call for a brief discussion of the paper by every member and guest present.

A. A. Higgins, Providence Gas Company—Everybody looks to the pay envelope. They naturally want to see it larger. It has been my experience that if a person's pay envelope is increased as soon as the increase is deserved and without the need of a request for increased compensation, the thoughtfulness of the superior is doubly appreciated and the return is made many times over in faithfulness, increased output of work, etc. I believe that persons paid this way will do more and better work than other persons of the same class who receive slightly larger salaries for which they have been obliged to battle.

W. K. Eavenson, Fall River Gas Works Company, spoke of the value of co-operative education. In New York City, he said, special attention was given to the commercial education of some 250 salesmen with the result that their earning capacity increased and complaints resultant from improper selling or installation of appliance greatly decreased. "A little knowledge gets one into much trouble. A thorough understanding is necessary for proper business workmanship."

William Gould, Governor—Ninety per cent of our conscious life is taken up with business. Proper environment, therefore, will make business life happier and increase ability to produce results. Do not be afraid to train understudies. Understudies relieve executives of detail and allow more time for constructive thinking. If the man who is afraid to tell his understudies what he knows sees the same attitude reflected in his superiors, what chance has he to learn their work?

R. Buckminster, Pawtucket Gas Company—Co-operation makes it possible for the man who takes a new position to excel the records made by his predecessor. The reason is that he is able to apply his own ideas in conjunction with the accumulated experience and ideas put into force by the predecessor. It is always essential to improve every opportunity that presents itself. We can never tell when our superiors are seeking for the proper type of man for some important position. The man who co-operates with his fellow workers and lets no opportunity for constructive work pass, is surely the man to be selected.

T. C. Savory, Ruud Manufacturing Company—I am greatly pleased with the discussion. Theories are good but the practical application of the theory as evidenced to-night by this valuable exchange of ideas is better. I believe that meetings of this sort will prove of increasingly great value to the association and its guests.

L. B. Palmer, Welsbach Company—This is the second paper by Mr. Carter that I have had the pleasure of hearing. Mr. Carter's ideas are excellent and I heartily agree with all that he says.

(*Continued on page* 368.)

Perfection in the Way of Uniform Pressure at the Consumer's Burner Can Be Attained Only by High Pressure Transmission

(*Continued from page* 358.)

pressure fluctuations, resulting in momentary excessive or insufficient pressure at the outlet.

High-Pressure Loops May Be of Great Assistance

When high-pressure pipe lines or loops are available they can be of very great assistance in increasing the utility of a low-pressure system. A branch can be taken from the high-pressure line and run for a considerable distance to help out a poor-pressure center at a comparatively small cost. The pressure in the high line may vary over a wide range without changing the governor-outlet pressure. A compressor may be shut down for several minutes while gas is being taken from a line. The high-pressure booster governor can be set to take up the load at a fixed minimum pressure. Service in small low-pressure sections of a city have been very much improved by putting in inexpensive booster pits with a No. 3 or No. 4 house regulator, feeding from the high to the low. These do not give perfect regulation and require closer inspection, but have been very useful in postponing the installation of expensive mains until a more favorable time.

Points to be brought out in connection with increased pressures or substitution of high for intermediate pressures are operating costs. If a plant is comparatively small, increased use of steam for power will not mean added labor in the boiler room, the only increase being in boiler fuel. Average gas-plant boiler practice will run not over 5 lb. steam per pound of fuel, so 1,000 lb. steam may be figured as costing one-tenth of the delivered price of a ton of coal. A blower to raise the pressure on a low-pressure system must pump all the gas sent out while it is running, and, if motor or turbine driven, will use the equivalent of 5 per cent steam per 1,000 cu. ft. when raising the pressure 12 in. Steam consumption will increase in proportion to the pressure.

An exhauster to maintain pressure in an intermediate main system must pump all the gas that the booster system supplies and will probably operate twelve to fourteen hours a day. It will require about 16 lb. steam per 1,000 cu. ft. pumped at 2 lb. pressure; steam consumption will be proportioned to the pressure and quantity of gas pumped.

A compressor must pump all the gas distributed under direct high pressure and whatever amount is required by boosters at peak load. In this connection a high-pressure main and compressor need not have as high a peak-load capacity per meter as a low-pressure system because of the storage capacity of the line.

Pumping against 20 lb. pressure, a non-condensing compressor will require about 50 lb. of steam per 1,000 cu. ft. The steam consumption will be proportional to the absolute pressure.

High-pressure gas may be used in a new way to boost low-pressure system supplied by an isolated holder. If the holder does not throw enough pressure and the peak load is more than can be supplied directly through a high-pressure governor, the high pressure may be used to inject gas from the holder into the low-pressure main. An installation that is being planned at present with 30 lb. high pressure available and 4-in. holder pressure will deliver 5½ ft. of holder gas for each foot of high-pressure gas, the resulting main pressure being 10 in.

The problems involved in supplying increased industrial demands have not been touched on in the foregoing, because they usually must be handled as individual cases. In general, an industrial consumer is very desirable, because the peak load is not increased in proportion to the increased daily consumption. In many cases, however, the investment in mains, governors and meters must be carefully considered in connection with the permanency of the business to be obtained.

For instance, during the height of the war work a plant with a very profitable war order might require a large amount of gas. The selling price of their product assumed that their own plant was to be paid for in a short time, while the selling price of gas was based on a low rate of interest on investment. A gas company should not have assumed the risk on this class of business unless the war plant agreed to pay a large part of the installation costs.

Another problem met with on large industrial installations is the pressure required at the burners. If a large volume of gas is to be metered at increased pressure, the cost per thousand will be appreciably lower unless a correction factor is applied to the meter readings.

Manufactured gas has been metered very successfully at 10 lb. pressure where the meters were designed with sufficient strength. They were proved at ordinary pressures and consumption was corrected with the proper factor after complete explanation to the consumer. The net result was a simple installation that required no booster pump on the outlet of the meter and a considerable saving in operating costs and trouble.

Since Louisville Suffered No Inconveniences During Past Winter Ration Question Becomes a Moot Case

Winter having passed without the consumers of natural gas suffering any inconvenience or hardships as a result of shortage of natural gas, the case of the city to enjoin the Louisville (Ky.) Gas & Electric Company from rationing natural gas to consumers has become a moot case, according to a ruling made by Judge Samuel B. Kirby, except as to the matter of costs. This question will be settled at a later hearing. In passing on the question the court said: "While the war is not over technically, the signing of peace is seemingly near and the demands for winter fuel are behind us. Therefore, this has become a moot question except as to costs." The court had stricken from the amended petition of the city a paragraph to the effect that the war ended with the signing of the armistice Nov. 11, 1918.

Natick Company Asks Rate Increase

The Natick Gas Light Company has petitioned the Massachusetts Board of Gas & Electric Light Commissioners to fix a price in excess of $1.75 per 1,000 cu. ft. The Board on Feb. 17 recommended that the company should not charge more than $1.75 per 1,000 cu. ft.

Providence Junior Chamber of Commerce Visits Sassafras Point Plant

The Junior Chamber of Commerce, Providence, R. I., visited the new plant of the Providence Gas Company at Sassafras Point Apr. 12. R. L. Fletcher and E. M. Russell, representing the company, conducted the boys to the plant which pulverizes the coal and carries it into the coke ovens on belts. The Chamber members saw the red-hot coke pushed from the ovens and the clouds of steam as the descending water cooled it. They noted the conveyors carrying the gas into a condenser to extract tar and ammonia, and inspected the boiler and powerhouse. Chairman H. H. Dauphinee, Louis F. Baker and Dwight L. Rogers were in charge of the expedition.

Brenham Gas Plant Sold

The Brenham (Texas) gas plant has been sold to R. E. Pennington, who is now sole owner of the plant. In the near future the mains will be extended and numerous improvements will be made, so as to make gas for cooking and other purposes available to more families in Brenham. The gas plant is a valuable piece of property, and is supplying hundreds of homes. G. M. Moran will continue as manager.

Reception Planned for Returned Soldiers by Laclede Employees

The employees of the commercial department of the Laclede Gas Light Company, St. Louis, are planning a reception for Sergeant John J. Barada when he returns with the Twelfth Engineers. Sergeant Barada will again re-enter the commercial department of the company. Seventy-two returned employees of the company have already been reinstated.

Industry's Prominent Part in World War Brought Out at Eleventh Annual Convention of Indiana Gas Association

Questions Pertaining to Reduction in B.t.u. Standard Discussed — Advancement During War — Indiana Gas in Future May Be Produced from Inferior Coals — Strict Economy Urged

A new era for the gas industry was prophesied at the eleventh annual meeting in Indianapolis, Ind., of the Indiana Gas Association, opening April 23 at the Claypool Hotel. The history of the gas industry's prominent part in the world war was recited by J. B. Klumpp, of the United Gas Improvement Company of Philadelphia, who came as a delegate from the American Gas Association. The Indiana Gas Association during its two-day meeting was expected to affiliate with the American Gas Association. The questions pertaining to the long fight for a reduction of the British thermal unit heat standard were prominent in the meeting, and it was expected that the public service commission of Indiana would be represented at one of the sessions by a speaker who would discuss the progress made in the investigation of the heat unit situation by the various committees now working on the problem in Indiana. Out of this investigation will probably come action by the public service commission to modify the 600 B.t.u. standard now existing in the State. It seems certain that some reduction from this standard will be made, and, basing their discussions on this possibility, several speakers at the conference indicated that they believed more auspicious days are in front of the gas industry.

Advancement During War

The tremendous advancement of the gas industry during the period of the war was alluded to time and

Dallas Will Be Texas Headquarters of Empire Company

The Empire Gas & Fuel Company of Bartlesville, Okla., has arranged to establish its Texas headquarters in Dallas and will soon occupy the twelfth floor of the Praetorian Building. This company is making many outside tests in various parts of the State. Its drilling campaign in Comanche County will be intensive, a number of tests having been located recently. The test of this company in Starr County that has been drilling for several months is reported to be making 3,000,000 feet of gas and some oil at about 2,690 feet.

Jamestown, N. D., Company Placed in Receiver's Hands

Announcement has been made recently that the Jamestown Gas Company has been placed in the hands of a receiver, Attorney C. S. Buck being named to represent the court by Judge J. A. Coffey. The announcement did not come as a general surprise, such action having been anticipated for several weeks.

The Jamestown Gas Company, according to officials, has been losing money steadily for the past two years due, it is said, to the enormous increase in cost of production.

The Chuctanunda Gas Light Company of Amsterdam, N. Y., at its annual meeting of the stockholders, declared a dividend of 4 per cent on capital stock.

again. President C. D. Shaul, manager of the Citizens Gas & Fuel Company, at Terre Haute, Ind., declared in his presidential address that "although five years of bloody war have come and gone, the gas interests have advanced a scorce of years."

He declared that "the valuable contribution of the gas fraternity in this trying era possesses an influence which shall extend onward with the march of time, lightening the burdens of future generations."

"The constant change ever occurring to man and his works has found the gas industry at all stages keeping pace with the busy world of progress and science," he said. "Too much cannot be said in commending our efforts to improve the condition of our colaborers and through them to impress the world at large of the folly of Bolshevism and radical leaders who make their livelihood through the misdirection of workingmen. We should see that all our soldiers upon their return are offered their old or even better positions, for those boys, aided by the forces of right and justice, brought the world war to a hasty end. The problems it has created will soon be solved; the future will bring to all of us adequate compensation for sacrifices made in the greatest cause humanity has ever known."

Gas from Inferior Coals

Then he said: "I firmly believe that future gas in Indiana will have to be produced from inferior coals, because the good coals are being absorbed by the railroads, but freight rates have and are making the expense too great. To carbonize the inferior coals into a better marketable coke, small unit ovens, of which some installation has been made in the State in the past two years, are proving fairly successful. We must not neglect our new-business activities, and this department should be reconstructed immediately upon real merchandising principles."

New-Business Problems

Roy A. Ziegler discussed the new-business problems confronting the companies in an address on "Future Policies of New-Business Departments." He discussed merchandising vs. service, and advocated new systematization of the work of solicitors. Proper maintenance and inspection of consumers' appliances is one of the most important policies to adopt in the coming gas era, he believes. He discussed the variable load situation, and declared that the industrial use of gas must continue to take care of the excess capacity of plants.

"Contrary to the belief of many," he said, "efficiency can be obtained in appliances built for other fuels by the installation of mechanical mixing devices, and in such cases we must remember that we are in the business of selling gas and not the merchandising of appliances, and whenever a customer has an appliance that can be converted with comparatively small cost at practically no loss in efficiency we should give the customer the benefit of his saving."

He urged that main extensions should now be undertaken where practicable, bearing in mind the increased costs. He also urged a broader publicity to maintain the good-will of the public.

Strictest Economy Must Be Practised

J. C. Grey, engineer of the Northern Indiana Gas & Electric Company of Fort Wayne, discussing "Shall We Continue in the Future Economies Forced Upon Us During War-times?", told of the tremendous increases in costs, and said that "without a doubt, from this time on, the strictest economy must be practised in the gas industry and to really economize we must take advantage of every possible improvement that will reduce the cost of operation."

He concluded: "Closer relations with the public, brought about by educational campaigns to familiarize our consumers with the various phases of our business, should go a long way on the road to a better understanding of the problems that we have to overcome in order to develop our industry, maintain our plants and furnish to the consumer, at the lowest possible cost, satisfactory service."

J. Weaver Smith, superintendent of appliances at the Citizens Gas Company, Indianapolis, spoke on "Replacement of War Load with New Industrial Installations." In the list of possibilities he discussed welding, gasteam boilers, baking by gas, sundry opportunities and heat treatment of steels.

H. D. Schall, assistant to the vice-president of the Detroit Stove Works, was scheduled to speak Thursday afternoon on "The Future of Gas Appliances as Compared to Prewar Conditions."

The association adjourned at noon Wednesday to "have its picture taken" for the American Gas Engineering Journal.

Banquet and Entertainment

A real Indiana Gas Association banquet at the Claypool Hotel was held Wednesday night. Various features of entertainment, all aimed to show again that the war is over, were exhibited for the guests. E. J. Burke, of the Citizens Gas Company, Indianapolis, secretary of the organization, made arrangements for the banquet and meeting.

New Members

New members admitted to the association by vote of the old members at the meeting were as follows:

David E. Spear, Jr., Northern Indiana Gas & Electric Company, Hammond; E. L. Donovan, Northern Indiana Gas & Electric Company, Logansport; Edwin F. Ripley, *Gas Age*, Chicago; C. A. Wainwright, Goshen; A. P. Tappar, the Eclipse Stove Company, Mansfield, Ohio; T. J. Spragle, Interstate Public Service Company, Seymour; L. G. Crenshaw, assistant sales manager, Parker-Russell Mining & Manufacturing Company, St. Louis, Mo.; V. W. Kennedy, Citizens Gas & Fuel Company, Terre Haute; H. W. Duncan, Fort Wayne; M. A. Corbett, the Columbus Steel Produce Company, Columbus, Ohio; J. A. Reilly, the Queen City Coal Company, Cincinnati, Ohio; L. A. Friedman, Chicago, Ill.; E. M. Read, Michigan Stove Company, Detroit; John V. Peck, the Michigan Stove Company, Detroit; H. E. Burckhalter, Green Castle Gas Company, Green Castle, Ind.; P. S. Mummu, Lebanon, Ind.; Charles C. Bahannon, United Gas & Electric Company, New Albany.

R. A. Ziegler, of Anderson, division manager of the Central Indiana Gas Company, was elected as the new president of the organization.

The outgoing officers of the association are: C. D. Shaul, Terre

Haute; W. W. Goodrich, James W. Dunbar and E. J. Burke, Indianapolis; J. H. Maxon, Muncie; S. E. Mulholland, Fort Wayne; J. D. Forrest, Indianapolis; E. Van Arsdale, Indianapolis; Morse Dell Plaine, Hammond; H. J. Roach; J. A. Patton, Elkhart; R. A. Ziegler, and I. C. Shephard, Evansville.

The entertainment committee for the present meeting included W. J. Barrett, W. C. Colvin and M. F. North.

The committee which brought in the report of affiliating with the American Gas Association included John Wertor, G. W. Johnson and W. J. Berryman.

MEETING ROOM DECORATED WITH FLAGS

The meeting room of the hotel was decorated profusely with American flags and the flags of the Allies. The great gas meter, standing higher than a man, which is always put in position for the annual meeting of the association by the Citizens Gas Company of Indianapolis, was hard at work ticking off thousands of cubic feet for the benefit of passers-by in the hotel lobby during the meeting.

Southern Counties to Supply Harbor City with Gas

Harbor City, Cal., is to have gas service. In response to a petition signed by every merchant and resident, and through the efforts of the local Chamber of Commerce, the Southern Counties Gas Company has agreed to install the service. Miles of piping are now being laid from Wilmington to Harbor City, and the work will be completed within a week. This service affects nearly 2,000 people in the vicinity. Lomita, adjoining Harbor City, is making an effort to also secure gas and expects to get it shortly.

Des Moines Company Wants Injunction to Restrain County from Collecting Excessive Tax

The Des Moines (Iowa) Gas Company has filed a petition in district court asking for an injunction to restrain W. M. Hammill, treasurer of Polk County, from collecting taxes for the year 1918 payable in 1919 in excess of $72,048. They claim that their assessment was not correct and ask that the county books be changed.

Dallas Gas Company Asks Tax Exemption

H. C. Morris, vice-president and general manager of the Dallas (Texas) Gas Company, and John C. Robertson, attorney, were in Austin recently conferring with the comptroller relative to the gas company's liability to the State for the gross receipts tax of ½ per cent on gross income. Some questions arose as to the deductions claimed by the company because of payments to the Lone Star Gas Company. The comptroller is not inclined to deduct these payments.

Standard Gas & Electric Negotiating for Oil Properties

Standard Gas & Electric Company officials are negotiating for the purchase of the C. B. Schaeffer oil properties. These properties include Consumers' Refining Company and producing fields at Yale and Cushing, Okla., and Butler, Kan. The properties have a daily production of between 4,000 and 5,000 barrels. According to oil men, a valuation of approximately $12,000,000 was placed on the properties by the owner in 1910. The annual report of Standard Gas & Electric Company will show net earnings after taxes of $1,574,927 for fiscal year to Dec. 31, 1918, against $1,566,051 for 1917.

Houston Company Decreases Capital

The Houston (Texas) Gas & Fuel Company has decreased its capital stock by $50,000. Under the decrease the total issue outstanding will include 1,500 shares of common at a par value of $100 and 5,500 shares of preferred at $100 par value, the latter to have a dividend of 7 per cent guaranteed, not to be greater than that figure in any event. The total capitalization is now $2,050,000.

F. D. Murphy, general manager of the company, said in explanation of the $50,000 reduction in the capital stock of the gas company, that two years ago the company increased its capital stock $100,000.

Under the law new stock issues must be disposed of within two years of date of issue. "Times were good when the company increased its capital stock and there was a market for these securities," said Mr. Murphy. "Now there is virtually no market for any kind of securities and as the company found it impossible to dispose of the remaining $50,000 of capital stock it simply went through the formality of decreasing its capital stock by $50,000.

Coalinga Trustees Purchase Gas Plant

The City Trustees, Coalinga, Cal., decided to purchase the Coalinga Gas & Power Company plant and distributing system in the city, and passed a resolution of their intention, to the end that the gas company officials can make immediate application to the State Railroad Commission for the sale, and hold a stockholders' meeting to ratify the action of the board of directors. The sale price is $40,000, plus whatever oil and bricks are on hand at the time of the city's taking the plant over. There will be no bond issue to secure the fund, but the sale price with interest at 6 per cent wil be divided into sixteen semi-annual payments of approximately $3,000 each. The city will save the State and county taxes on the property, and by combining it with the water department, will eliminate a large part of the operating expenses. A recent deal with the Canadian Coalinga Oil Company for its natural gas surplus, will give the city sufficient natural gas for the needs of the consumers without purchasing oil, especially during the summer months.

Chamber of Commerce Annual Meeting to Be Held in St. Louis, Apr. 28 to May 1

St. Louis, Mo., April 19.—The preliminary program of the seventh annual meeting of the Chamber of Commerce of the United States which will be held at St. Louis April 28 to May 1, inclusive, has just been issued. Coincidental with the Chamber of Commerce Convention there will be a meeting of the National Councillors of the Chamber on April 28, a meeting of the Advisory Council of War Service Committees on the same day, and a meeting of the National Association of Commercial Organization Secretaries on May 1.

The program of the Chamber of Commerce convention follows:

Monday, April 28, 2.30 p. m., Roof Garden, Statler Hotel—Meeting of national councillors, President Wheeler in the chair. (1) Reports of committees: a—Committee on

statistics (A. W. Douglas, chairman); b—committee on publications (John H. Fahey, chairman); c—committee on international commercial arbitration (Owen D. Young, chairman); d—committee on budget and efficiency (W. L. Clause, chairman); e—advisory committee to the organization service bureau (S. C. Mead, chairman). (2) discussion; (3) action on program of annual meeting; (4) selection of nominating committee.

8.30 p. m., Roof Garden Statler Hotel.—Meeting advisory council war service committees. (1) suspended government contracts; (2) consideration future activities of war service committees.

Tuesday, April 29, 10.30 a. m., Coliseum—General session. (1) Invocation—The Rt. Rev. Thomas F. Gailor, Bishop of Tennessee; (2) rules of convention; (3) appointment of committees on credentials and resolutions; (4) report of national council; (5) report of board of directors; (6) report of treasurer; (7) address—Harry A. Wheeler, President of the Chamber of Commerce of the United States; (8) address—Finance and Victory Loan, Hon. Carter Glass, Secretary of the Treasury.

2.30 p. m.—Group meetings: Group I, industrial production, war service committees; group II, domestic distribution (wholesale), A. L. Shapleigh, chairman, St. Louis; group III, foreign trade, George Ed. Smith, chairman, President American Manufacturers Export Association; group IV, transportation (railroads), George A. Post chairman; group V, public utilities.

8 p. m., Coliseum—General session. (1) Trust legislation; (2) foreign relations; address, Maurice Casenave, Head of the French Services in the United States; (3) agriculture; address H. J. Sconce, Sidell, Ills.; address, L. E. Porter, Springfield, Minn.

Wednesday, April 30, 10.30 a. m., Coliseum—General session. (1) Commerce; address, Hon. William C. Redfield, Secretary of Commerce; (2) merchant marine; address, Hon. Edward N. Hurley, Chairman United States Shipping Board; (3) shipbuilding; address, Homer L. Ferguson, President Newport News Shipbuilding and Drydock Company.

2.30 p. m.—Group meetings: Group I, industrial production, war service committees; group II, domestic distribution (retail); group III, foreign trade; group IV, transportation (merchant marine), Edward B. Burling, chairman; group V, waterways and highways.

8 p. m., Coliseum—General session. (1) Transportation: a—address, Hon. Walker D. Hines, United States Railroad Administrator; b—Senator Albert B. Cummins; (2) smoker.

Thursday, May 1, 10 a. m., Coliseum—General session. (1) League of Nations.

2.30 p. m., Coliseum—General session. (1) report of committee on nominations; (2) election of officers; (3) report of committee on resolutions; (4) discussion and action on resolutions.

Sessions of Organization Secretaries

Thursday, May 1, 9.30 a. m., Statler Hotel. (1) address, the Chamber of Commerce in the readjustment period, J. M. Guild, president; (2) employment bureaus for returned soldiers, R. H. Manley, Omaha; (3) the Chamber of Commerce and housing. 12 o'clock Noon, Statler Hotel, round table luncheon; 2.30 p. m., Statler Hotel, (1) Americanization work; (2) Industrial relations and Bolshevism, Paul V. Bunn, St. Louis.

The Necessity of the Commercial Man's Selling Himself to His Own Company the Theme of Evening at April Meeting of the Gas Sales Association of New England

(*Continued from page* 363.)

M. E. Abbott, Weir Stove Company—A splendid paper. It is easy to follow the lines of least resistance. Many men of good ideas fail for this reason. It i seasier to accept the first rebuff and retire than to persist and gain a hearing from the "Big Boss." A good idea is worth fighting for. Persistence, perseverance will gain a hearing, and then the good idea will sell itself.

William Gould, Governor—Fight for your own ideas. Don't "backwater." Many executives have a system of arguing against a man to find out how much the man knows about a subject and how well he has thought out his sales ideas. This is not condemnation; it is simply investigation. Don't be afraid to fight. Stick up for a good thing and don't allow anyone to scare you into saying it is not good when you have faith in it.

E. E. Stevens, New Bedford Gas Company—Know your scheme yourself before you try to present it to someone else, else you cannot do that scheme justice. Co-operation seems to be increasingly popular. More co-operation between high executives and subordinates is evident each day. Some men are too timid to make a proper presentation of an idea. Coax and encourage such men until their seuf-consciousness is forgotten. Then, if they are thoroughly at home in their subject, they will warm up and present it with an ardor that surprises you.

R. Buckminster, Pawtucket Gas Company—Progressive co-operation is easier near the top than near the bottom. Men are not receptive of suggestions unless they are satisfied with labor conditions. It is hard to talk to men about co-operation and pulling together with those men are disgruntled and dissatisfied with the treatment accorded them by their immediate superiors.

Mr. McPherson, Walworth Manufacturing Company—I am heartily in accord with Mr. Carter's paper. It is the more intersting to me because I work with Mr. Carter and know that he applies successfully all the principles which he advocates.

F. A. Woodhead, Arlington Gas Light Company—Co-operation is an animal instinct for self-preservation. A certain scientist tells me that without bees there could be no flowers; without flowers no bees. In a herd of wild horses attacked by wolves the weaker horses enter the center of a circle formed by the stronger horses, who stand, heel out, and by their vicious kicks keep the wolves away. Without co-operation the herd would be exterminated. It is the circle of hoofs, strength in all directions—in other words, co-operation, which preserves the company.

R. Fancy, Newton & Watertown Gas Light Company—Study your boss. Read his mind. In this way you can forestall his requests and relieve him of unnecessary thinking. He can co-operate better with those above him because you co-operate with him. Co-operation helps all along the line.

L. J. Swan, Salem Gas Light Company—I have enjoyed the paper very much. I believe that educational work holds an organization together. The co-operative spirit is being manifested by companies towards em-

ployees. Results are evident. Back up your sales organization by a practical education of labor. Better service all around results.

Mr. Pettingell, Jr., Blackstone Valley Gas & Electric Company, Woonsocket, R. I.—Too many commercial managers load themselves up with detail and have too little time for constructive thought. Train an understudy to relieve you of the detail, and spend your entire effort in determining proper sales policies. Sell your organization the idea that you assume full responsibility for the results of your sales policies and they will accept your ideas without question. Do not fail to accept suggestions and criticisms from your subordinates. Their viewpoint is different from yours and they can often bring in much helpful information to the boss who is willing to hear them.

Cyrus Barnes, Ruud Manufacturing Company—Co-operation certainly brings results. Clubs, associations, societies, etc., aid in bringing about co-operation by binding employer and employee together. Social and educational work should be combined.

W. T. Pease, Ruud Manufacturing Company—I am pleased with the manner in which the members here to-night have co-operated in the discussion of the paper. When this association was organized it was one of the chief aims to aid in developing the members through frank interchange of ideas at the meetings. The results to-night are especially gratifying, and I am sure if more meetings are conducted in the same manner, and if everyone is given ample opportunity to "sell himself," the meetings will increase in value each month. Men receive as they give, and each man in giving his ideas to-night receives ideas manyfold in return.

Mr. Bodwell, Connecticut Power Company, New London, Conn.—Help the man below. Encourage him to ask questions. The information we volunteer may not be the information that he needs the most. Let him ask help about the things that puzzle him. In this way we can help him and help ourselves more quickly.

J. W. Geddes, Ruud Manufacturing Company—To me it seems that co-operation is not a thing. It is the evidence of something else, and that something else is intelligent thought. Co-operation cannot be measured out in pints, quarts or yards. We cannot hold out our hands and say, "There is some co-operation; use it." Co-operation comes from within. It must be born in a man or created in him. Teach a man to think clearly. Teach him to ask, "What results will come of this act?" Teach him to think to the end and he will appreciate the value of working with others instead of attempting to struggle on alone. This is the only way to secure co-operation.

M. L. Hatch, Arlington Gas Light Company—There should be understudies not only for the executives but for every employee of an organization; not only for permanent promotion but for the emergency is a competent understudy desirable.

Mr. Bradley, Arlington Gas Light Company—The principles discussed to-night are of great value only if applied. It is the practical application of the principles of co-operation that help co-operation flourish. You cannot expect the man below you to co-operate if you yourself do not set him a good example.

Mr. Lopez, Arlington Gas Light Company—I am glad to hear to-night of the good things that managers are willing to do to help their subordinates. Such willingness is bound to encourage and sustain those who are striving to work toward better things.

It was moved by Mr. Woodhead and seconded by Mr. Fancy that the secretary be instructed to take the necessary steps to affiliate with the American Gas Association. The question was put and carried unanimously.

At the request of William Gould, Governor, the gift of a silver porringer to Norton McKeen's son, as a token of our esteem for Mr. McKeen himself, was approved in a motion put by Mr. Pettingell and seconded by a dozen. The motion was carried by acclamation.

The meeting then adjourned.

Northern Indiana Company Granted Increase for Lafayette

The public service commission has issued an order authorizing the Northern Indiana Gas & Electric Company to charge 90 cents net a 1,000 cu. ft. of gas at Lafayette and West Lafayette for the first 5,000 cu. ft.; 85 cents for the next 25,000; 80 cents for the next 45,000 and 75 cents for more than 75,000. The new schedule does not vary from the present schedule for the first 5,000 cu. ft. of gas used. The new schedule is 5 to 15 cents higher for amounts greater than 5,000.

The commission placed a tentative value of $600,000 on the Lafayette plant and system. It found that the gross income of the company last year brought a return of only 7.3 per cent on that figure and held that after payment of 1.5 for depreciation the return was not sufficient. The new schedule is effective for one year beginning May 1.

Paris Company Threatens to Cut Off City Lights Unless Debt Is Settled

In order to forestall the threatened action of the Paris (Ky.) Gas & Electric Company which gave notice that unless the city settled its indebtedness the city lights would be cut off, Mayor January has secured an injunction restraining the light company from taking such action or in any way interfering with the light system. Bond in the sum of $5,000 was given the mayor. No date was set for a hearing on the injunction.

Centralia Company Advances Rates

Notice of proposed increase in gas rates in Centralia and Chehalis, Wash., by the North Pacific Public Service Company was received by the city commission Apr. 9 from the public service commission. The increase, which becomes effective May 8, ranges from 10 cents to 25 cents a month.

Ukiah Gas Rates Higher

An indication that the rates now established for public utilities consuming oil in quantity will certainly not be reduced until oil goes down in price was furnished Apr. 15 by the Railroad Commission deciding the Ukiah gas case. Because the Ukiah Gas Company will have to pay $2.60 a barrel for oil used in the manufacture of gas as against the $1.40 it had been paying under the contract which expired the first of the year, the commission gave the company authority to charge the following schedule of rates:

First 400 cu. ft. or less a meter a month $1; next 2,600 cu. ft. $2.10

per 1,000; next 5,000 cu. ft. $1.70 per 1,000; next 7,000 cu. ft. $1.50 per 1,000; all over 15,000 cu. ft $1.25 per 1,000.

The old rates gave the company an average of $1.83 per 1,000 cu. ft. during the last six months of the year, giving the company 6 per cent on its investment during that period. The new rates will give the company an average price of $2.20 per 1,000, and provide 4 per cent upon the investment for depreciation and interest.

Increased Rate Denied for Walla Walla and Yakima

The public service commission recently refused to grant an increase of 10 cents per 1,000 cu. ft. on gas service in Walla Walla and Yakima, Wash., as petitioned for by the Pacific Power & Light Company. An increase was granted this company a year ago and with war practically at an end the commission sees no further justification for gas increases in the territory included.

Series of Ads Being Run in Daily Newspapers by Portland Company

The Portland Gas & Coke Company is running a series of small, spicy daily ads in the newspapers of Portland, Oregon, which are called "Heart-to-Heart Talks with Hartog," Mr. Hartog being the new sales manager and head of the advertising and publicity department of the company. His success in publicity work in California caused him to be called to Oregon and it is said that the City of Eugene, which engaged him, not only doubled in population in the two years of his campaign, but that real estate values quadrupled.

Personal Notes

J. P. Chalmers, assistant secretary of the Empire Gas & Fuel Company, Bartlesville, Okla., has resigned to associate himself with A. J. Diescher, former vice-president, who recently started an oil company of his own at Winfield, Kansas. At the opening of the Empire Club Apr. 10, many tributes were paid Mr. Chalmers by his Bartlesville associates who expressed themselves as sorry to see him leave the organization and all desiring him future success. As a token of their esteem his friends presented him with a gold watch, gold fountain pen and leather traveling bag. The presentation speech was made by Hayes McCoy of the legal division.

Nicholas J. Cunningham, for the last sixteen years executive secretary of the Springfield Gas & Electric Company and the Springfield Traction Company, both of Springfield, Mo., recently tendered his resignation in order that he might devote himself more fully to the development of extensive holdings of oil land in McCulloch County, Texas, where he owns large acreage. Mr. Cunningham's resignation was effective April 15. The light and power corporation has not appointed Mr. Cunningham's successor and he will likely remain in Springfield until fully relieved of his responsibilities. Mr. Cunningham entered the public utility field with the Peoria Gas & Electric Company. In 1903 he came to Springfield as secretary of the Springfield Gas & Electric Company. In 1906 he brought about the consolidation of this company with the Springfield Traction Company. Since that time he has been executive secretary of both utility companies. Mr. Cunningham assisted in the organization of the Missouri association of gas, electricity and water works companies, now known as the Missouri Utilities Association. He was secretary of the association for six years. Mr. Cunningham was born in Peoria, Ill. He received his education there and after having completed a course at the St. Victurs academy, near Kankakee, Ill., began his business career with the public utility concerns.

L. C. Smith, of Gloversville, N. Y., has been elected a member of the board of directors of the Syracuse Lighting Company to succeed the late John J. Cummins. Mr. Smith is general manager of the Fulton County Gas & Electric Company, which, like the Syracuse company, is a United Gas Improvement Company property. The other members of the board of the Syracuse Lighting Company re-elected at the annual stockholders' meeting are: James C. De Long, Walton Clark, George W. Curran, Stephen Peabody, Henry Seligman, Paul Thompson, S. T. Bodine and Lewis Lillis.

Prof. A. R. Acheson has tendered to Commissioner of Public Safety Nicholson his resignation as consulting engineer to the Syracuse Bureau of Gas and Electricity, to take effect May 1. Pressure of private business is given as a reason for his leaving the city's employ. Professor Acheson is head of the Mechanical Engineering Department of Syracuse University, and his duties there prevent him from giving more time to the city's work.

E. A. Bechstein has resigned as second vice-president and general manager of The Sandusky (Ohio) Gas & Electric Company, effective April 7, 1919. He is to become associated with a new electric supply company that will be incorporated shortly and will take over the present Electric Equipment Company.

Charles J. Otten, Jr., has entered upon his duties as manager of the Plymouth (Mass.) Gas Company and is getting familiar with the local conditions and the work. J. E. Kelleher, the retiring manager, will remain in Plymouth for a short time to assist his successor before he goes to Norwood to become the manager of the Norwood Gas Company.

Paul Cowan and Harry Akard, of the Bristol (Tenn.) Gas & Electric Company, will leave soon for Bartletsville, Okla., where they have accepted positions with the Henry L. Doherty Company, of New York.

The Standard Gas & Electric Company stockholders held their annual meeting April 16 and re-elected the following retiring directors: H. M. Byllesby, A. S. Huey, O. E. Osthoff, J. J. O'Brien, George H. Harries, R. J. Graf, D. T. Flynn, W. H. Clarke, S. W. Childs, B. E. Sunny, F. W. Stehr, John H. Roemer, Donald McDonald, Elmer Dover and W. R. Thompson. Only routine business was transacted.

The Chuctanunda Gas Light Company of Amsterdam, N. Y., held a meeting of the stockholders on Monday evening, Apr. 21, at which the following directors were elected for the ensuing year: Hon. John Sanford, Hon. John K. Stewart, Wm. H. Cooper, F. S. Van Derveer, D. D. Cassidy, James Voorhees. At a meeting of the directors the following officers were elected for the

ensuing year: Hon. John Sanford, chairman of the board; Hon. John K. Stewart, president; Wm. H. Cooper ,vice-president; D. D. Cassidy, secretary; F. S. Van Derveer, treasurer; O. A. Merchant, Jr., general manager, and A. R. Conover, counsel.

THOMAS DOREMUS CROFFUT, 65 years old, of 1271 Bergen Street, Brooklyn, N. Y., widely known in military circles for many years in Brooklyn and at one time a member of the Governor's staff of this State, died on Friday, April 11. Mr. Croffut was born in New York City, on Oct. 16, 1853, and had lived most of his lifetime in Brooklyn. He was many years ago a superintendent of construction for the old Williamsburg Gas Company.

WILLIAM D. CONOVER, sixty-four, former head of the bookkeeping department of the Brooklyn Union Gas Company, Brooklyn, N. Y., died recently.

Societies and Associations

THE PACIFIC GAS ASSOCIATION held their first "Get-together-Dinner" for the season of 1919 at the Hotel Alexandria, Los Angeles, Cal., on Saturday, Mar. 15, there being 135 members present, President Kuster presiding. During the serving of the dinner, the members were entertained by those cabaret entertainers such as the "South Land" can produce and which are only to be found in the city of Los Angeles and its environs, and which is only a pocket edition of what they have in mind for the 26th annual convention in September. A telegram was read from E. C. Jones, expressing his regret at not being able to be in attendance, as was also a letter from F. S. Myrtle, publicity editor, as well as greetings from John A. Britton. President Kuster called upon the chairmen of the several committees for reports and after which they staged a "real Spanish bull fight," between the "North" and "South." Paul Overton represented the "South" and C. B. Babcock the "North." After these two gentlemen had relieved themselves as to the merits of their respective home towns, President Kuster appointed Frank Cressey, Champ S. Vance and Milt Neely of Fresno to act as judges and who, after careful consideration, awarded the blue ribbon to the Los Angeles bull. One of the most interesting features was the reading of questions received in response to request, and the answers to same, and it is the intention of the officers to make this a feature of the Second Get-together-Dinner. Papers which are being prepared for presentation at the 26th annual convention which will convene at Los Angeles, California, on Sept. 26, 1919, will have to do with all the branches of the industry, and at this early date the indications point to the fact that the coming convention will unquestionably be one of more than passing interest, both in point of subjects to be discussed and attendance. The second Get-together-Dinner will be held in San Francisco during the month of July and notice as to the date, time and place will be published later.

Dunbar Company Granted Increased Rates

Authority was granted the Charleston-Dunbar Natural Gas Company, of Dunbar, W. Va., to increase its rates, in a decision handed down by the Public Service Commission Apr. 7. The new rates are 19 cents per 1,000 cu. ft. for all firms using under 150,000 cu. ft. a month, and 17 cents per 1,000 ft. for firms using over 150,000 cu. ft. per month. The large consumers will pay the increase.

The opinion of the Public Service Commission states that in granting the increase it was its purpose to allow 8 per cent profit on the amount invested, and 8 per cent for wear and depreciation of the property.

The new rates will be effective until Oct. 1, when a report must be filed with the Public Service Commission showing what the profits are from the new system.

The old rates were 19 cents for the first 150,000 cu. ft. of gas, 16 cents for the second, 11 cents for the third, and a one-cent-per-thousand-feet reduction for each 100,000 thereafter, the rates being based on monthly consumption.

The brief granting the decision shows the following facts: The Charleston-Dunbar Gas Company has about $450,000 invested and in 1918 earned $47,437.20, or 10 per cent of the value. They have contracted to supply 2½ million cu. ft. daily, of which 500,000 feet have to be purchased from the United Fuel Gas Company at a minimum of 18 cents per 1,000 ft. This will make the production more expensive this year.

Construction Notes

Two Kemp Systems Being Installed at Fairport, N. Y.

The C. M. Kemp Manufacturing Company of Baltimore, Md., are installing two Kemp Systems, each of 7,000 cu. ft. per hour capacity, in the sanitary can plant of the American Can Company, at Fairport, N. Y., to replace producer-gas apparatus.

The highly efficient application of city gas through this apparatus to the can-making machinery and ovens for baking decoration on tin sheets, it is claimed, will make the city gas service cost less than the producer gas per unit of product.

Can Factory at Chicago Being Equipped with Kemp System

The new can factory of the Libby, McNeill & Libby Company, Union Stock Yards, Chicago, Ill., is being equipped with the Kemp System by the C. M. Kemp Manufacturing Company, of Baltimore, Md.

The most modern and improved can-making machinery is being installed and the improved methods of gas application are being employed. This will be a modern installation in every respect and it is expected that the economies in gas consumption will pay for the plant in a short time.

Western United to Add Two Gas Machines and Holder to Joliet Plant

In order that the large and growing clientele of the Western United Gas & Electric Company may be accommodated, arrangements have been made to add two gas machines for the making of carbureted gas, these machines to form a part of the equipment of the huge Joliet, Ill., plant from which Aurora and all cities and towns in the Western United system derive the gas supply. A gas tank of a capacity of something like 500,000 cu. ft. will also be erected as a relief holder at Joliet. The holder will probably be in place by Sept. 1, and the two gas machines probably before that date.

Lone Star Company Enters into Contract with Government

Lone Star Gas Company has entered into an agreement with the United States Government for the conservation of natural gas from the company's well at Petrolia, Tex. Under the agreement the company has received $1,500,000 in cash from the Government and limits its withdrawals of gas from wells in the Petrolia district to 10,000,000 cu. ft. a day. The agreement is the result of the presence of helium in the gas produced from these wells and the development of helium gas for the inflation of dirigible balloons. This gas is a war-time discovery and as it is non-inflammable its use makes the operation of "lighter-than-air" craft much more safe. The necessity for the agreement between the company and the Government is the fact that thus far these are the only wells which have been found to produce gas with sufficient quantities of helium to make its extraction worth while.

THE HADLEY OIL COMPANY, incorporated with $240,000 capital; M. L. Rogers, T. A. Irwin, W. G. Singer of Wilmington, Del.

THE MYERS OIL & GAS CORPORATION, incorporated with $250,000 capital; E. H. Myers, Jr., W. A. Channes, W. B. Weston, M. C. Row, Edgar Berry all of Tulsa, Okla.

THE LAMBERT-TOLIVER OIL & GAS COMPANY, incorporated with capital of $300,000; J. E. Toliver, Colorado Springs; E. J. Lambert, E. E. Feistel, all of Tulsa, Okla.

THE EMPIRE GAS & FUEL COMPANY OF DELAWARE balance sheet is as follows: Assets—Plant and investment, $45,956,298; securities, $370,993; supplies on hand, $2,288,935; crude oil on hand, $458,783; endorsement resource, $932,980; sinking fund, $560,494; notes receivable, $112,500; accounts receivable, $1,299,590; prepaid expense, $304,429; securities pledged, $2; earnings receivable, $1,889,889; cash, $851,969; total, $55,027,874. Liabilities—Capital stock, $12,500,000; bonds, $12,195,500; advance sales of oil, $4,445,000; notes payable, loans, $3,172,813; notes payable settlement accounts, $2,964,525; notes discounted, $112,500; accounts payable, parent and independent companies, $2,543,337; endorsement liability, $102,980; accrued accounts, $5,373,071; securities borrowed, $2; contingent fund, $983,677; depreciation reserve, $3,503,159; surplus, $7,649,696; total $55,027,874.

THE NEWPORT NEWS (VA.) & HAMPTON RAILWAY, GAS & ELECTRIC COMPANY reports earnings for February as follows:

Gross	
Net after taxes	
Surplus after charges	
Two months' gross	
Net after taxes	
Surplus after charges	

THE CITRUS BELT GAS COMPANY in 1918, acording to their annual report to the Railroad Commission, lost $28,539. Here are the figures:

Operating revenue	$109,990.95
Operating expenses	123,195.84
Net operating loss	$13,204.89
Non-operating revenue	330.67
Gross corporate loss	$12,874.22
Non-operating revenue deductions	63.93
Interest accrued on funded debt	15,601.00
Total deductions	$15,664.93
Net corporate loss for year.	28,539.15
Deficit on Dec. 31, 1917	11,796.69
Deficit on Dec. 31, 1919	40,335.84

THE PORTLAND (ORE.) GAS & COKE COMPANY'S gross earnings for February, according to the company's statement just issued, show an increase of 38 per cent over February, 1918. Operating expenses show an increase of 41 per cent, and net income an increase of 34 per cent for the same period. For the 12 months' period ending February net earnings show an increase of 32 per cent over the preceding 12-month period. The figures for February are as follows:

	1919	1918	Increase
Gross	$188,701	$131,671	$57,029
Net after taxes	46,408	41,420	4,987
Surplus after charges	22,641	21,455	1,185
Two months' gross	408,027	261,878	146,148
Net after taxes	102,498	78,783	23,715
Surplus after charges	57,081	38,851	18,229

THE WATER-OIL GAS BURNER COMPANY, incorporated with capital of $150,000; D. T. Connit, White Plains, N. Y.; C. E. Bahn, Brooklyn; R. Condit, Yonkers, N. Y.

THE VIRKYTEX OIL & GAS COMPANY has been incorporated in Delaware with $50,000 capital; Grace L. Perochean, Richmond O. Smith, Brooklyn; E. Roberts, New York, are the incorporators.

THE VALLEY GAS COMPANY, Prestonburg, Ky.; capital $40,000; incorporators, A. Fleming, J. M. Owens and A. P. Brookover.

THE MONELA OIL & GAS COMPANY, incorporated with capital of $250,000; R. W. Plummer, E. A. Davis, E. H. Cleaver, all of Chicago.

THE PACIFIC GAS & ELECTRIC COMPANY, for the year ended Dec. 31, 1918, reports gross earnings of $22,595,516; increase, $2,782,135; net after taxes, etc., $7,865,187, increase $906,496; total income, $8,375,388, increase $908,350; bond and other interest, $4,117,065, increase $16,158; bond discount and expense, $187,019, increase $1,968; depreciation reserve, $1,000,000; preferred dividends, $1,490,463, increase $19,358; surplus, $1,580,840, increase $870,865.

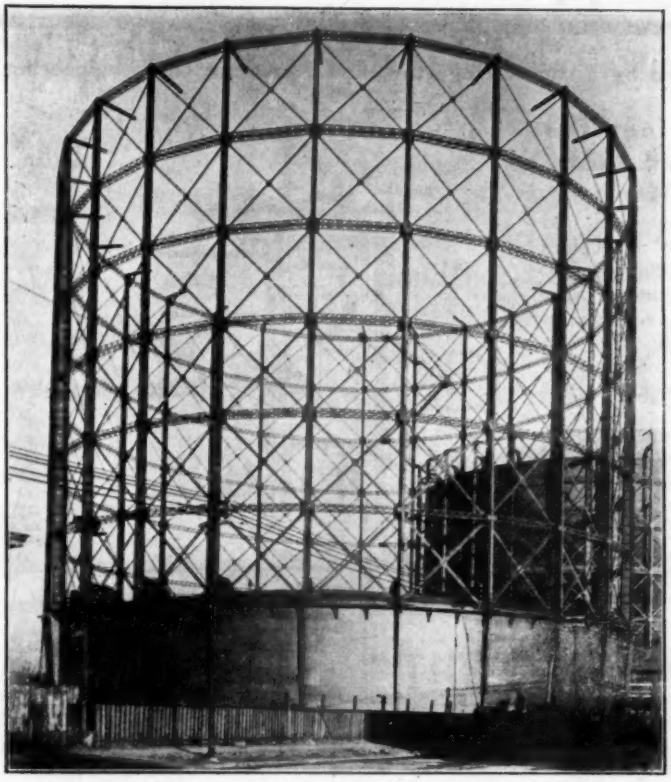
THE CENTRAL COAL & COKE COMPANY, for year ended Dec. 31, 1918, reports gross profits, $1,533,243, increase, $274,254; expenses, interest, etc., $216,684, decrease, $222,722; net, $1,316,559, increase, $496,976; Delta Land & Timber Company, net, $200,276, decrease, $282,337; total net, $1,516,835, increase, $214,339.

	1918	1917	Inc.
Gross	$190,029	$137,861	$52,168
Operating	104,275	73,852	30,423
Net	$85,754	$64,009	$21,744
Balance	56,541	34,230	23,310
For the twelve months' period:	**1918**	**1917**	**Inc.**
Gross	$1,852,791	$1,385,142	$467,649
Operating	1,035,741	766,604	269,137
Net	$817,050	$618,538	$198,513
Balance	465,869	280,440	185,529

RITER-CONLEY CO.

PITTSBURGH, PA.

PURIFYING BOXES



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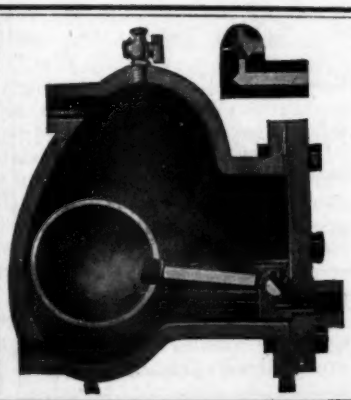

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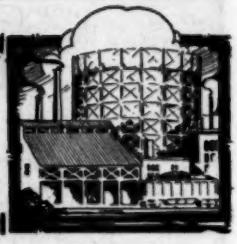
Massachusetts—10 High St., Boston
Minnesota—Metropolitan Bank Bldg., Minneapolis
Michigan—814 Penobscot Bldg., Detroit
Nebraska—504 First N. Bk. Bldg., Omaha
New Jersey—122 Elm St., Elizabeth
New York—P. O. Box 505, Rochester
New York—422 River St., Troy
Penn.—1503 Sansom St., Philadelphia
Penn.—1207 Hartje Bldg., Pittsburgh
Wisconsin—428 Jefferson St., Milwaukee
Cuba—Cuba No. 3, Havana

With The Equipment & Appliance Manufacturers



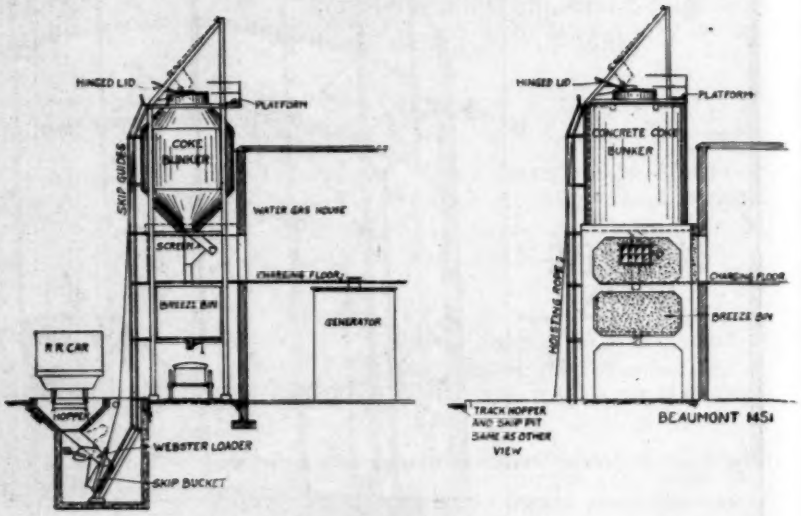
Conducted by Business Department of American Gas Engineering Journal

Labor-Saving Devices for Handling Coal and Coke Around Gas Plant

One of the many labor-saving and economical devices around a gas plant in connection with handling of coal and coke is the Beaumont Skip Hoist. This apparatus consists of a bucket running on inclined or vertical tracks and hoisted by means of a steel cable attached to an electric drum.

The hoist drum is connected to a motor and the bucket is started upward by simply pushing a button. It discharges and returns automatically to the pit. One of the illustrations shows how the coke is taken from the pit and hoisted up into the coke burner.

The motors used are usually standard elevated motors with high-resistance end rings and are thrown on the line without the use of external resistance. The magnetic switch control circuit can be run to any convenient point and provided with switch to cut off the power.



BEAUMONT SKIP HOIST

The other illustration shows the coal-handling system of the Chattanooga Gas & Coal Products Company, Chattanooga, Tenn., which handles the coal from the cars to the ovens.

This installation was made by the R. H. Beaumont Company, Philadelphia, Pa., who manufacture a large variety of coal and coke-handling apparatus specially designed for use around a gas plant.

COAL-HANDLING SYSTEM—RAILROAD CARS TO OVENS

A 36-Page Booklet Covering Briefly the Principal Events of the War, from June 1914, to Nov. 21, 1919

The Roberts & Mander Stove Company, Philadelphia, Pa., is distributing a 36-page booklet entitled "Popular History of the War." It lists in chronological order the important events from June 28, 1914, when Archduke Francis Ferdinand of Austria-Hungary was assassinated, down to the surrender of the German fleet on Nov. 21, 1918. The principal happenings of the war period on all fronts are given in concise form, and several maps in colors are shown.

This brief history was written by Merton M. Wilner, assistant editor of the *Buffalo Express.*

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